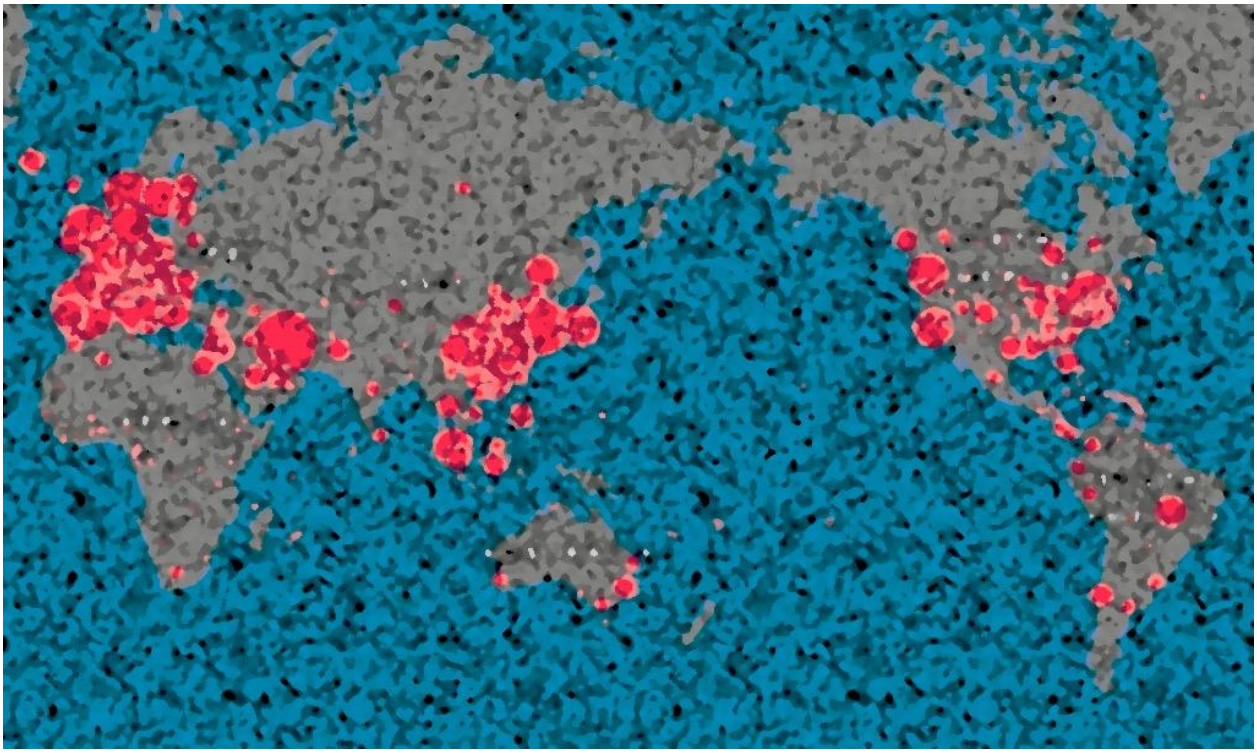
Coronavirus Disease 2019 Response
Training of Trainers Manual



project HOPE
Emergency Response

WATSON INSTITUTE
INTERNATIONAL & PUBLIC AFFAIRS
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CHR&HS CENTER FOR HUMAN RIGHTS & HUMANITARIAN STUDIES

Introduction

- Containing the COVID-19 pandemic will rely on strong collaborations and well-coordinated efforts at the local, institutional, regional and national levels.
- In the following training, we have synthesized information on how to respond to this outbreak based on guidance from WHO, local Ministries of Health and other trusted organizations.
- The following manual provides guidance about how to conduct a training session about COVID-19 and reviews competencies for each module that should be kept in mind as the focus areas identified for each topic.

List of Modules

- COVID-19 Background
- Infection Prevention and Control
- Surveillance (passive and active contact tracing)
- Screening and Triage
- Stabilization/Resuscitation
- Diagnosis and Management
- Health Facility Operations and Surge Capacity
- Risk Communication and Public Health Messaging
- Training of Trainers

Training Planning and Organization

Consider the level of education that your audience has and tailor your wording and explanations to a level that all participants can understand

- Additional considerations include: skills of participants, special interests and biases, reasons for attending.

- Determine number of participants per training session and how they will be invited – communications media such as email lists, posters, online groups or mailed invitations

- Assess resources available for presenting such as audiovisual equipment

If possible, coordinate smaller group sessions instead of teaching large groups together to maintain focus

Plan for any personnel needed to help coordinate logistics

Budgeting and Resources

Consider the costs for the following aspects of the training session

- ❑ Materials
- ❑ Supplies for simulations and demonstrations
- ❑ Printing, badges, other items such as folders or pens
- ❑ Refreshments if they will be provided
- ❑ Room rental
- ❑ Travel Costs
- ❑ Costs to cover additional/per diem staffing during the training session

Needs Assessment

Administer needs assessment to determine needs or gaps in the target audience's current knowledge, skills, or abilities

- See "Complete Question List" study guide
- Administer to a pilot group from the target audience
- Tabulate the results of the needs assessment and prioritize based on findings

Revisions to the training after receiving post-training input from participants is also important – the training may need to be updated with more current information or to be modified to better address local needs

Preparation and General Tips

It is strongly recommended that you utilize the presenter notes function in Powerpoint for these presentations, as a great deal of supplemental material, resources, and explanations can be found there. Print the notes if you do not have AV equipment available that can display them while you are speaking.

Review each lecture in brief to get a sense of the material therein shortly prior to the training
Most importantly, practice giving each lecture while running through the slides – this is the best way to find out which parts of the module you may not be comfortable explaining or may need to practice discussing

Teaching Best Practices

- Perform demonstrations that all participants can see
- Provide a display table for participants viewing, or consider passing around sample materials during the discussion
- Allow participants time to think about questions
- If you ask a question to the audience and do not get responses, consider whether you may have asked a question that is difficult to understand, and consider rephrasing – sometimes lack of response indicates a lack of understanding and you may need to provide more information
- Consider repeating the question from the audience, if you have the microphone and are in a large group, to ensure you heard it correctly and so that others can also hear
- Try not to embarrass a person who responds with a wrong answer, highlight anything about the response that was correct and then provide clarification of the inaccurate information

Day of Training Planning/Organization Checklist

Fill in the blank lines with your own checklist items

- ❑ Arrive early
- ❑ Set up and display materials and resources for attendees
- ❑ Connect and check AV equipment
- ❑ Check heat/AC, lighting, bathroom locations
- ❑ Post any directional signs
- ❑ Meet with staff assisting with event to review responsibilities
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____

Background

The Background Module gives a brief overview of the modules included in the training, provides historical information regarding what is known about the etiology and spread of SARS-CoV-2.

Focus on the information regarding the SARS-CoV-2 virus and its transmission characteristics, as much of the remainder of the information included is a preview of important information that will be repeated in later modules of the course.

You may want to review latest news on vaccine development to inform the slides on this topic with the most recent information.

Competency C 1.0	**<u>COVID-19 Background:</u>** Attain sufficient understanding relating to the biology, pathophysiology and transmission mechanism of SARS-CoV-2, and the associated case definition and epidemiology of COVID-19.
Context:	*All healthcare delivery is grounded in medical sciences and health providers preparing for and responding to COVID-19 outbreak activities must have a basic yet sufficient understanding of the* Severe Acute Respiratory Syndrome Corona Virus 2 (*SARS-CoV-2) pathogen and the associated COVID-19 disease. This understanding will ensure that they have the foundational knowledge to provide healthcare, or instruct those that will subsequently provide that care, at population and individual levels. As well this knowledge base will allow personnel to appropriately communicate with persons of varying roles including the lay public, political representatives/community leaders and other healthcare practitioners.*
Sub-competencies:	
C 1.1	Understand the biologic aspects of SARS-CoV-2 pertaining to the type of viral pathogen that it is and how it relates to other Corona viruses (e.g. the 2003 Severe Acute Respiratory Syndrome outbreak as well as non-epidemic corona viruses)
C 1.2	Attain a basic understanding of how SARS-CoV-2 effects the body pertaining to organ systems most frequently impacted by infection and the pathophysiologic changes that when a patient has COVID-19.
C 1.3	Identify currently known transmission mechanisms for SARS-CoV-2 and have knowledge of possible transmission mechanisms still being evaluated.

C 1.4	Know the case definitions for COVID-19, including the associated exposure aspects, symptoms and signs, and clinical findings.
C 1.5	Understand the epidemiologic profile of the COVID-19 outbreak including the initial outbreak setting, global transmission trends and future projections.

Primary reference materials:

- WHO. 2019 Novel Coronavirus (2019-nCoV): STRATEGIC PREPAREDNESS AND RESPONSE PLAN. Accessed at: https://www.who.int/docs/default-source/coronaviruse/srp-04022020.pdf
- WHO. Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf?sfvrsn=bc7da517_6&download=true
- WHO. Coronavirus disease (COVID-2019) situation reports. Accessed at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/

Infection Prevention and Control

This module involves critical information regarding prevention of infection with COVID-19. The most important information, such as the precautions that should be taken and appropriate PPE for use are repeated in multiple modules, such as the Screening and Triage module. Emphasize the importance of following protocol on every occasion to prevent infection spread and modeling best practices for staff members to create a culture in which staff members feel comfortable pointing out potential hazards to infection control and are willing to assist each other by observing doffing PPE to help prevent contamination.

You may want to provide a live demonstration of donning and doffing PPE and/or show a video to illustrate the concepts – this is recommended to be done just prior to the PPE exercise in the Screening and Triage module, since the Infection Prevention and Control module is lengthy and will likely run over one hour. Because the information is dense, though, try to take a moment every 5 or 10 minutes to ask the audience a question. You may want to hold questions until the end to ensure you have time to get through the presentation.

Competency C 2.0	**Infection Prevention and Control:** Gain functional understanding of infection prevention and control (IPC) practices in general and specifically for COVID-19 outbreak response, with proficiency across varying IPC situations including individual patients and providers, facilities and community settings. Inclusive within IPC is the use of specialized equipment for prevention of transmission and protocols for care delivery, transmission mitigation and isolation.
Context:	*IPC is essential to infectious disease care at individual, facilities and community levels. To reduce the transmission of COVID-19 and promote outbreak control, healthcare personnel must understand IPC principles and practices and how they are applied to the COVID-19 outbreak. Within IPC for COVID-19 there are specific approaches for mitigation and isolation and for the use of Personal Protective Equipment (PPE) that are applied differently to patients, and providers and differently in healthcare and community settings. These approaches must be understood for effective implementation to protect all populations at risk. Additionally healthcare personnel must be able to design IPC packages with appropriate PPE and facilities measures for the COVID-19 response setting they are working in. These IPC packages require monitoring and evaluation for effectiveness and must be able to be readily adapted in the dynamic outbreak settings.*

Sub-competencies:	
C 2.1	Have knowledge of principles and practices for IPC with a focus on routes of transmission and protection mechanisms at the individual, facility and community levels.
C 2.2	Know how to correctly identify and coordinate the use of IPC for patients with possible COVID-19, based on case definitions, presenting to healthcare facilities.
C 2.3	Attain specific understanding of IPC measures used for response to COVID-19 for healthcare providers pertaining to PPE with focus on donning and doffing, hand and respiratory hygiene techniques and monitoring of adherence.
C 2.4	Have the ability to design basic IPC monitoring and evaluation assessments for feedback and protocol adjustments in healthcare settings.
C 2.5	Be able to identify IPC recommended requirements for COVID-19 for suspected, and confirmed cases in community settings.
C 2.6	Understand how to interact with communities to facilitate maximized IPC for COVID-19 with setting appropriate measures and use of available resources.

Primary reference materials:

- WHO. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125
- WHO. 2019 Novel Coronavirus (2019-nCoV): STRATEGIC PREPAREDNESS AND RESPONSE PLAN. Accessed at: https://www.who.int/docs/default-source/coronaviruse/srp-04022020.pdf
- WHO. Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf?sfvrsn=bc7da517_6&download=true
- WHO. Rational use of personal protective equipment for coronavirus disease (COVID-19). Accessed at: https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf
- WHO. Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts. Accessed at: https://apps.who.int/iris/rest/bitstreams/1269964/retrieve
- WHO. Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19). Accessed at: https://apps.who.int/iris/rest/bitstreams/1271229/retrieve
- WHO. Water, sanitation, hygiene and waste management for COVID-19. Accessed at: https://www.who.int/publications-detail/water-sanitation-hygiene-and-waste-management-for-covid-19

Surveillance

Ensure that audience members know reliable sources to utilize for current information about the pandemic. If there are specific national sites or agencies focused on local needs and news, please include these in the presentation or share with participants in a handout.

The forms for transmission investigation and contact tracing can just be briefly displayed for illustration on the slides, but are difficult to read – printing a copy of the form that participants can pass around and review is recommended.

Case definitions and active versus passive surveillance are key concepts to emphasize when giving the presentation.

Competency C 3.0	**Surveillance (Passive and active contact tracing):** Understand the goals and approaches of disease surveillance used in health facilities and communities as they pertain to the COVID-19 outbreak. While also attaining understanding and functional capabilities with case reporting tools.
Context:	*Surveillance for infectious disease is a continuous process in which there is data collection, analysis, interpretation, and dissemination, which focuses on the occurrence of diseases in defined populations. Surveillance data is often applied in the development, implementation and evaluation of control programs to improve outbreak response efforts and help ensure appropriate resource allocations. Surveillance can occur in communities and/or in health facilities based on response needs and infrastructure. In infectious disease outbreaks surveillance via differing forms of contact tracing is an important process that can be used to reduce transmission by identifying those at risk. As COVID-19 has clinical presentations similar to many other common respiratory diseases surveillance and appropriate contact tracing are key parts of global outbreak response activities that will be required as the outbreak moves forward.*
Sub-competencies:	
C 3.1	Understand and be able to describe general infectious disease surveillance concepts and how they pertain to COVID-19 in facilities and community.

C 3.2	Be able to identify and describe the different COVID-19 case definitions for surveillance including, presumptive, confirmed and Persons Under Investigation (PUI).
C 3.3	Describe the definitions for passive and active contact tracing and the approach to each in COVID-19 response.
C 3.4	Identify special populations and settings that may be at greater risk for COVID-19 and require enhanced surveillance.
C 3.5	Be able to utilize the World Health Organization, revised case report form for COVID-19.

Primary reference materials:

- WHO. Global Surveillance for COVID-19 disease caused by human infection with novel coronavirus (COVID-19). Accessed at: https://apps.who.int/iris/rest/bitstreams/1270873/retrieve
- WHO. 2019 Novel Coronavirus (2019-nCoV): STRATEGIC PREPAREDNESS AND RESPONSE PLAN. Accessed at: https://www.who.int/docs/default-source/coronaviruse/srp-04022020.pdf
- WHO. Household transmission investigation protocol for 2019-novel coronavirus (2019-nCoV) infection. Accessed at: https://www.who.int/docs/default-source/coronaviruse/20200125-20019-ncov-household-transmission-investigation-protocol-final.pdf?sfvrsn=bb74cb59_2&download=true
- WHO. Revised case report form for Confirmed Novel Coronavirus COVID-19. Accessed at: https://apps.who.int/iris/bitstream/handle/10665/331234/WHO-2019-nCoV-SurveillanceCRF-2020.2-eng.pdf

Screening and Triage

This lecture reviews waiting room and screening infection prevention and control measures, then includes a small group exercise for discussion of local implementation and logistics of virtual screening. The exercise is at about 15 minutes in to the lecture and is meant to take 15 minutes.

After the exercise there is another approximately 15 minutes worth of slides, leaving about 15 minutes in a one hour time slot for practicing donning and doffing of PPE. The video is about 2 and a half minutes long and the entirety of it should be shown for completeness. You may need to budget more time for the PPE exercise depending on how many sets of PPE you have for the number of participants, and therefore how many people can practice at once. Have at least one partner for each person to observe the practice and point out potential sources of contamination.

Competency C 4.0	**Screening and Triage:** Understand and apply principles of screening and triage in healthcare deliver to be able to appropriately identify those in need of evaluation and possible treatments for COVID-19.
Context:	*Patient screening and triage is a key first step in all healthcare delivery as a formalized method to rapidly differentiate patients with life-threatening, urgent, and non-urgent states. Screening and triage must be performed in outbreak response to ensure patient and population needs are met. Healthcare practitioners must have the skills to accurately screen and identify patients that could potentially transmit COVID-19 to others or who are at high-risk for deterioration needing rapid interventions. As the disease states associated with COVID-19 are diverse ranging from nearly asymptomatic and mild to critically ill, screening and triage is of the utmost importance in addressing the outbreak. Furthermore as COVID-19 causes clinical states similar to other acute respiratory infections, screening and triage play an even more important role to help distinguish between diseases that may be common in specific care setting versus being due to the COVID-19 outbreak. As well, as screening and triage at health facilities function as frontline surveillance venues for the detection of COVID-19 in regions where it has not yet been identified, personnel must understand how to report suspected or confirmed cases, locally, nationally and globally.*

Sub-competencies:	
C 4.1	Understand the concepts and principles of screening and triage and be able to identify patient states that require immediate interventions and/or isolation.
C 4.2	Correctly identify and apply IPC and PPE screening and triage actions for practitioners in healthcare settings when there is evaluation of possible or confirmed COVID-19.
C 4.3	Correctly identify and apply IPC and PPE screening and triage actions that should be applied to patients with possible or confirmed COVID-19 that present to health facilities for evaluation.
C 4.4	Understand how to use remote screening and triage processes to reduce patient burdens and inappropriate referrals and maximize appropriate facilities based evaluations.
C 4.5	Develop an understanding of reporting systems for suspected and confirmed COVID-19 case locally (setting specific), nationally and globally.

Primary reference materials:

- WHO. Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf?sfvrsn=bc7da517_6&download=true
- WHO. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125
- WHO. 2019 Novel Coronavirus (2019-nCoV): STRATEGIC PREPAREDNESS AND RESPONSE PLAN. Accessed at: https://www.who.int/docs/default-source/coronaviruse/srp-04022020.pdf
- WHO. Rational use of personal protective equipment for coronavirus disease (COVID-19). Accessed at: https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf

Stabilization and Resuscitation

Reviews the basics of resuscitation. If your audience is made up of mostly physicians who are familiar with resuscitation and critical care, you may consider spending a briefer amount of time on this lecture in order to focus on more detailed discussion of the management of patients with shock and ARDS in the Diagnosis and Management module.

Near the end there is a brief discussion of ECMO/ECLS, this can be just a mention if it is not locally available, or more time can be spent on the topic if it is available.

Competency C 5.0	**Stabilization/Resuscitation:** Known the appropriate life-saving actions to stabilize and/or begin treatment of critically ill patients that are at risk of having COVID-19. Understand the use of IPC measures and how they are applied in patients with suspected or confirmed critical illness from COVID-19.

Context:	*In all emergency treatment situations medical practitioners must be able to rapidly assess and treat patients with critical and potentially time-dependent life-threatening states of illness. This period of clinical care is focused on stabilization and resuscitation with primary attention paid to hemodynamic and respiratory issues and interventions. Although the minority of cases of COVID-19 will have severe illness the disease state can be life threatening, particularly in older patients with comorbid medical conditions and as such some patients with COVID-19 will require large amounts of resources for resuscitation. Given the potential geographic distribution of the COVID-19 outbreak there will be variability in the types of resources accessible to stabilize and resuscitate critically ill COVID-19 patients and understanding of the facilities, staff and equipment in a given response setting will guide how resuscitative care is performed. Although there is less focus on identifying specific diseases and etiologies when a patient is critically ill, in the setting of the COVID-19 outbreak it is imperative to ensure that IPC measures are followed if COVID-19 is possible or suspected to prevent and the spread of* SARS-CoV-2 *in healthcare settings.*
Sub-competencies:	
C 5.1	Attain comprehension of factors that indicate critical illness and the immediate clinical actions need for emergency resuscitation with a focus on cardiovascular profusion and safe airway management for oxygenation and ventilation.
C 5.2	Understand the pathophysiology and epidemiologic characteristics of critical illness in the COVID-19.
C 5.3	Identify testing (laboratory and imaging) results associated with severe disease states, or which increase the likelihood of progression to a severe state in patients with COVID-19.
C 5.4	Be able to identify septic shock states in patients with COVID-19 based on clinical parameters and understand how to treat these severe patients using fluid resuscitation and vasopressor medications.
C 5.5	Understand recommendations and best practices for materials and approaches to management of patients with severe respiratory pathology (commonly as hypoxic respiratory failure or Acute Respiratory Distress Syndrome [ARDS]) due to COVID-19.
C 5.6	Be capable of performing appropriate IPC when treating those with severe COVID-19 with a focus on intubation indications and approaches based on resource availability.

Primary reference materials:

- WHO. Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf?sfvrsn=bc7da517_6&download=true
- Médecins Sans Frontières. Clinical guidelines - Diagnosis and treatment manual. ISBN 978-2-37585-060-2. Accessed at: https://medicalguidelines.msf.org/viewport/CG/english/clinical-guidelines-16686604.html
- WHO. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125

Diagnosis and Management

Guidance is provided on the appropriate collection of samples for testing. Participants should consider their institution's stock of testing supplies including viral media and appropriate swabs, which can limit testing ability.

This lecture is also very dense with information about a variety of clinical presentations with diagnostic criteria and management algorithms. It is recommended to provide copies of these for participants to review and keep, since it will be difficult to absorb the information from the slideshow presentation alone unless they already had familiarity with it.

Competency C 6.0	**Diagnosis and Management:** Understand and be able to apply protocols for the diagnosis and treatment of COVID-19 in health facilities and community settings.
Context:	*Central to all healthcare delivery is the correct use of diagnosis and treatment measures based on the clinical state and situation that care is being provided in. Understanding the diagnostic approaches for COVID-19 in settings where the disease has not yet been identified, or in which there is limited disease burden and as well in high burden settings is important to ensure that case identification is achieved and treatments are utilized efficiently. Most cases of COVID-19 will be non-severe illnesses and some may be managed outside of health facilities, as such a thorough comprehension of which cases can be taken care of in communities is crucial knowledge as this will assist in reducing strain on health systems caused by the outbreak. As the scientific understanding of the COVID-19 is evolving there may be different diagnosis and treatment approaches developed overtime. As well the resources available for testing samples for SARS-CoV-2 and treating patients with COVID19 may not be the same in all settings and healthcare providers must follow established local guidelines and protocols.*
Sub-competencies:	
C 6.1	Identify the clinical presentation of patients with COVID-19 pertaining to signs and symptoms and the spectrum of disease that can occur.
C 6.2	Be able to outline and describe the diagnostics approaches for COVID-19 based on case definitions and laboratory and radiological tests.
C 6.3	Understand which cases of suspected or confirmed COVID-19 can be managed at external to health facilities and how such patients should be cared for in the community pertaining to supportive treatments and isolation.
C 6.4	Comprehend and apply management guidelines for COVID-19 cases without critical illness that require facilities based care for, supplemental oxygen, parenteral fluids and antimicrobials.
C 6.5	Be aware of experimental tests and treatments under investigation that may have benefits in patients with COVID-19 and be used as the outbreak progress.

Primary reference materials:

- WHO. Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf?sfvrsn=bc7da517_6&download=true
- WHO. Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases, Interim guidance, 2 March 2020. Accessed at: https://apps.who.int/iris/rest/bitstreams/1271387/retrieve
- Médecins Sans Frontières. Clinical guidelines - Diagnosis and treatment manual. ISBN 978-2-37585-060-2. Accessed at: https://medicalguidelines.msf.org/viewport/CG/english/clinical-guidelines-16686604.html
- WHO. Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts. Accessed at: https://apps.who.int/iris/rest/bitstreams/1269964/retrieve

Operations and Surge Capacity Development

It is most important to emphasize the need for planning prior to the start of medical surge, pointing out the challenges that may be faced if staff have to stay home due to their own illness or illness in their family.

This lecture has two breakouts for discussion questions and the slides will take well under an hour to present, so it may make sense to allow participants to discuss their potential surge plans and other needs such as childcare accommodations.

A sample Incident Action Plan is included and can be used as a focal point for discussion – provide a copy to participants to review.

Competency C 7.0	**Health Facility Operations and Surge Capacity:** Identify and understand characteristic of health facilities operations as they pertain to readiness and care delivery in the setting of the COVID-19 outbreak. Understand the potential for and ways to address over capacity due to surges in patient volumes which can occur in outbreak situations.
Context:	*Health facilities require well-defined operational guidelines and procedures to be able to deliver care in an appropriate and efficient manner. This state of readiness ensures that care protocols are in place and that sufficient staffing and physical resource are available when patients present to access healthcare. During infectious disease outbreaks, such as with COVID-19, the numbers of people presenting with an illness (or concerned that they could be at risk for illness) to health facilities can greatly increase. These increases can result in surge states, in which the available resources may be insufficient to meet needed capacity. Due to this, having in place COVID-19 outbreak specific operational readiness plans for health facilities can ensure that protocols are available and that setting appropriate sufficient and scalable resource can be accessed so that care can be effectively delivered to large numbers of patients safely.*
Sub-competencies:	
C 7.1	Understand the importance and concepts that allow for effective health facilities operations and planning.
C 7.2	Understand the potential impacts of surge and capacity for health facilities to handle situations with large numbers of patients in a COVID-19 outbreak settings.
C 7.3	Be able to identify and evaluate important staff and resources metrics for COVID-19 outbreak response for health facilities operational reediness.
C 7.4	Develop the knowledge required to create a surge capacity plan for health facilities in general and in a setting specific manner.

Primary reference materials:

- *WHO Novel Coronavirus (COVID-19) Operations Support & Logistics Disease Commodity Package, Version 3. Accessed at: https://www.who.int/publications-detail/disease-commodity-package---novel-coronavirus-(ncov)*
- WHO. Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/docs/default-source/coronaviruse/clinical-management-of-novel-cov.pdf?sfvrsn=bc7da517_6&download=true
- WHO. Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases, Interim guidance, 2 March 2020. Accessed at: https://apps.who.int/iris/rest/bitstreams/1271387/retrieve
- WHO. Laboratory biosafety guidance related to coronavirus disease 2019 (COVID-19). Accessed at: https://apps.who.int/iris/bitstream/handle/10665/331138/WHO-WPE-GIH-2020.1-eng.pdf
- WHO. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. Accessed at: https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125
- WHO. 2019 Novel Coronavirus (2019-nCoV): STRATEGIC PREPAREDNESS AND RESPONSE PLAN. Accessed at: https://www.who.int/docs/default-source/coronaviruse/srp-04022020.pdf
- WHO. Rational use of personal protective equipment for coronavirus disease (COVID-19). Accessed at: https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf
- WHO. The COVID-19 Risk Communication Package For Healthcare Facilities. Accessed at: https://iris.wpro.who.int/bitstream/handle/10665.1/14482/COVID-19-022020.pdf
- WHO. Water, sanitation, hygiene and waste management for COVID-19. Accessed at: https://www.who.int/publications-detail/water-sanitation-hygiene-and-waste-management-for-covid-19

The Risk Communication module contains useful information about how to communicate with staff of a healthcare institution and the general public during a disaster, specifically the response to the COVID-19 pandemic. Be sure to direct participants to the World Health Organization website, which houses most of the useful communications imagery featured on the slides, sample posters, etc. The Centers for Disease Control (CDC) also has shareable images and tools that can be freely downloaded relevant to COVID-19 messaging.

There should be time for discussion, consider asking the audience who they feel are the special populations in their community or region who would be most vulnerable to stigma or who should be considered in design of communications templates, and how to address these issues.

Competency C 8.0	**Risk Communication and Public Health Messaging** Understand the importance of, and approaches to, health communication messaging in outbreak response as it pertains to COVID-19.
Context:	*Education and effective communication and messaging are strategic resources that can contribute to the success of outbreak prevention and response. In the context of the COVID-19 outbreak, it is critical that health professionals are aware of public concerns and trained to provide public health advice. As there exist many unknowns about COVID-19 that will be learned as the outbreak evolves, the need for frequent, recurrent and transparent communication is of the utmost importance. The WHO has put forth COVID-19 frameworks and checklists for risk communication and community engagement (RCCE) to assist with public health messaging. The objective of which is to provide actionable guidance that focuses on disseminating information meant to explain, persuade, and empower decision-making to protect the public's health in response to COVID-19. Related to communication and health messaging is social stigma prevention and reduction. Health stigmatization is the negative association between a person or group or people who share certain characteristics and a specific disease. In outbreaks, people and populations can be discriminated against because of a perceived link with a disease, and this has been observed in the COVID-19 outbreak. Effective communication and messaging can reduce such negative actions, protect human rights and improve the COVID-19 outbreak response efforts both locally and globally.*
Sub-competencies:	
C 8.1	Understand the overarching principles in risk communication and public health messaging during outbreak prevention and response efforts.

C 8.2	Identify and be able to apply the WHO risk communication and community engagement (RCCE) strategies for the COVID-19 response across outbreak situations (i.e. settings without case, with few cases, high-numbers of cases).
C 8.3	Be familiar with the tools and approaches for communication and messaging that can be used to inform the public, and highlight those most likely to be used in differing COVID-19 outbreak settings and media platforms.
C 8.4	Know how to access global and regional updates on COVID-19 outbreak information and resources designed to assist with providing appropriate public health communication and messaging.
C 8.5	Be aware of the impacts of stigma in COVID-19 outbreaks and approaches to reduce stigmatization during public health communication and messaging.

Primary reference materials:

- WHO. Risk communication and community engagement (RCCE) readiness and response to the 2019 novel coronavirus (2019-nCoV): Interim guidance v2. Accessed at: https://www.who.int/publications-detail/risk-communication-and-community-engagement-readiness-and-initial-response-for-novel-coronaviruses-(-ncov)
- WHO. Communicating Risk in Public Health Emergencies. A WHO Guideline for Emergency Risk Communication (ERC) policy and practice. Accessed at: http://apps.who.int/iris/bitstream/10665/259807/2/9789241550208-eng.pdf?ua=1
- WHO. 2019 Novel Coronavirus (2019-nCoV): Strategic Preparedness and Response Plan. Accessed at: https://www.who.int/docs/default-source/coronaviruse/srp-04022020.pdf
- Social Stigma associated with COVID-19. Accessed at: https://www.who.int/docs/default-source/coronaviruse/covid19-stigma-guide.pdf

Training of Trainers

A short slide set on for Training of Trainers is included and is recommended to be utilized at any Training of Trainers event to provide opportunity to review highlights of the material included in this manual and discuss potential challenges of holding a training session with the event participants.

Appendix A: Pre/Post Test

Test Questions

1. SARS-CoV-1 (from the 2002-2003 outbreak) and SARS-CoV-2 (from today's outbreak) share the following trait:
    a. They both bind to the hACE2 receptor in the respiratory tract using "spike proteins".
    b. They are both parasitic infections.
    c. They both originated from Saudi Arabia.
    d. They have similar case-fatality rates.
    e. They both are spread by fecal-oral transmission.

2. Which of the following precautions does the WHO recommend when providing standard care for suspected/confirmed COVID-19 patients? Select only those that apply.
    a. Standard precautions
    b. Airborne precautions always
    c. Airborne precautions only during aerosolizing procedures
    d. Droplet precautions
    e. Contact precautions
    f. Aseptic precautions
    g. No precautions

3. You are evaluating the breathing of a patient. They are awake and speaking but you notice their SpO2 is 86%. What is the next step?
    a. Move on to circulation and come back.
    b. Ignore it and move on
    c. Place them on supplemental oxygen
    d. Intubate them immediately

4. COVID-19 infection may cause which of the following:
    a. Mild uncomplicated illness typically seen with upper respiratory tract infections
    b. ARDS
    c. Sepsis
    d. All of the above

5. The WHO requests that national authorities report probable and confirmed cases of COVID-19 within how many hours of identification?
    a. 24 hours
    b. 48 hours
    c. 72 hours
    d. 96 hours

6. The three steps of screening in the correct order are:

a. Identify, Immobilize, Inform
b. Identify, Isolate, Inform
c. Immobilize, Inform, Identify
d. Inform, Identify, Isolate

7. Strategies to reduce potential spread of COVID-19 in the waiting room include:
    a. Masks for symptomatic patients
    b. Distancing of symptomatic patients at least 1 meter from others
    c. Signs instructing patients how to protect others when they cough
    d. Hand hygiene stations
    e. All of the above

8. Which of the following is TRUE regarding the use of a “surge site”?
    a. It should be used for all infectious diseases.
    b. They should always be located on a hospital site.
    c. Should be considered when all other options have been exhausted and there are adequate resources to manage it.
    d. All of the above.

9. How can risk communication build trust?
    a. Avoid discussing areas of uncertainty.
    b. Inclusion of at-risk and affected populations.
    c. Limit public dialogue to avoid confusion.
    d. Dissemination of information once a topic is well understood.

10. Social stigma related to health can lead people to:
    a. Hide signs of illness to avoid discrimination.
    b. Seek out specialty medical care.
    c. More quickly adopt healthy behaviors.
    d. Discuss their illness on social media.

Answer Key

1. SARS-CoV-1 (from the 2002-2003 outbreak) and SARS-CoV-2 (from today's outbreak) share the following trait:
    a. They both bind to the ACE2 receptor in the respiratory tract using "spike proteins" - TRUE
    b. They are both parasitic infections (FALSE – they are viral infections)
    c. They both originated from Saudi Arabia – (FALSE – they both originated from China)
    d. They have similar case-fatality rates (FALSE – SARS ~ 11%, COVID-19 ~ 3.4%)
    e. They both are spread by fecal-oral transmission (FALSE – respiratory droplet transmission)

2. Which of the following precautions does the WHO recommend when providing standard care for suspected/confirmed COVID-19 patients? Select ALL that apply.
    a. Standard precautions
    b. Airborne precautions always
    c. Airborne precautions only during aerosolizing procedures
    d. Droplet precautions
    e. Contact precautions
    f. Aseptic precautions
    g. No precautions

    The WHO recommends always following standard precautions, droplet and contact precautions for suspected or confirmed COVID-19 cases. Airborne precautions such as negative pressure room and N95 mask use are recommended if undertaking aerosolizing procedures such as orotracheal intubation or bronchoscopy.

3. You are evaluating the breathing of a patient. They are awake and speaking but you notice their SpO2 is 86%. What is the next step?
    a. Move on to circulation
    b. Wait and see if it improves
    c. Place them on supplemental oxygen
    d. Intubate them immediately

    If a patient is hypoxic, that needs to be addressed before moving on, but in the situation described, intubation is not indicated.

4. COVID-19 infection may cause which of the following:
    a. Mild uncomplicated illness typically seen with upper respiratory tract infections
    b. ARDS
    c. Sepsis
    d. All of the above

    The majority of COVID-19 cases are mild, but it can also cause sepsis, septic shock, and ARDS.
5. The WHO requests that national authorities report probable and confirmed cases of COVID-19 within how many hours of identification?
    a. 24 hours
    b. 48 hours

c. 72 hours
d. 96 hours

If reporting cases is not feasible, the WHO requests that countries provide daily and weekly aggregated data.

6. The three steps of screening in the correct order are:
    a. Identify, Immobilize, Inform
    b. Identify, Isolate, Inform
    c. Immobilize, Inform, Identify
    d. Inform, Identify, Isolate

    During screening, one must identify patients who have symptoms of potential COVID-19 infection, then apply appropriate infection prevention and control protocols by isolating. The infection prevention team, local department or ministry of health, and other public health authorities should be informed.

7. Strategies to reduce potential spread of COVID-19 in the waiting room include:
    a. Masks for symptomatic patients
    b. Distancing of symptomatic patients at least 1 meter from others
    c. Signs instructing patients how to protect others when they cough
    d. Hand hygiene stations
    e. All of the above

8. Which of the following is TRUE regarding the use of a "surge site"?
    a. It should be used for all infectious diseases.
    b. They should always be located on a hospital site.
    c. Should be considered when all other options have been exhausted and there are adequate resources to manage it.
    d. All of the above.

    A surge site is not necessary for all infectious diseases. It can be located in an alternative site away from the hospital, like a tent or a stadium. If resources at available hospitals are overwhelmed it is an option to be considered.

9. How can risk communication build trust?
    a. Avoid discussing areas of uncertainty.
    b. Inclusion of at-risk and affected populations.
    c. Limit public dialogue to avoid confusion.
    d. Dissemination of information only once a topic is well understood.

    Risk communication should involve early and frequent dissemination of information to build trust, and should acknowledge areas of uncertainty.

10. Social stigma related to health can lead people to:
    a. Hide signs of illness to avoid discrimination.
    b. Seek out specialty medical care.
    c. More quickly adopt healthy behaviors.
    d. Discuss their illness on social media.

    Stigma can work against effective infection control by discouraging people from getting testing and care. Steps should be taken to combat stigma and support stigmatized groups or people.

Appendix B: Complete Question List/Study Guide

Background Questions

11. Where is COVID-19 thought to have originated?
    a. Wuhan, China
    b. Saudi Arabia
    c. New York, United States
    d. Tokyo, Japan
    e. Milan, Italy

12. What is thought to be the major mode of transmission of COVID-19?
    a. Airborne transmission
    b. Blood-borne transmission
    c. Transfer of respiratory droplets
    d. Fecal-oral transmission

13. Which of the following can affect the Ro/overall transmissibility of COVID-19?
    a. Proportion of population susceptible
    b. Biological characteristics of pathogen
    c. Public health measures implemented (quarantines, etc.)
    d. Mode of transmission
    e. All of the above

14. Which of the following are common symptoms reported in cases of COVID-19?
    a. Fever
    b. Shortness of breath
    c. Diarrhea
    d. Dry cough
    e. All of the above

15. COVID-19 is a zoonotic infection, meaning it likely originated from an animal reservoir. (True / False)

16. SARS-CoV-1 (from the 2002-2003 outbreak) and SARS-CoV-2 (from today's outbreak) share the following trait:
    a. They both bind to the hACE2 receptor in the respiratory tract using "spike proteins".
    b. They are both parasitic infections.
    c. They both originated from Saudi Arabia.
    d. They have similar case-fatality rates.
    e. They both are spread by fecal-oral transmission.

17. Who are most likely to experience severe disease from COVID-19?

a. Children
b. Young adults
c. Older adults with underlying health conditions
d. Everyone is equally likely to experience severe disease

18. Which of the following tests should ideally be used to confirm diagnosis of COVID-19?
    a. RT-PCR of respiratory specimen
    b. RT-PCR of blood specimen
    c. CT scan of chest
    d. Evidence of clinical symptoms

19. Most people who get COVID-19 infection require hospitalization. (True / False)

20. Which of the following challenges might complicate vaccine development?
    a. Vaccine development is high risk and very expensive for the companies involved.
    b. The SARS-CoV-2 virus may mutate which could affect the efficacy of the vaccine.
    c. Vaccine development may take several years before it is readily available to slow transmission.
    d. All of the above.

Infection Prevention and Control Questions

1. Airborne precautions should be employed at all times when a suspected COVID-19 case is present. (True/False)

2. Hand hygiene should occur regularly at all times, even when wearing PPE. (True/False)

3. When developing an Infection Prevention and Control team (IPC), the following actions should be taken:
    a. Assignment of specific titles, roles, and responsibilities to each member of the team.
    b. Conducting ongoing training and status updates via a clear line of communication.
    c. Developing a risk assessment plan based on guidance from the WHO.
    d. Updating healthcare workers and members of the team as the outbreak evolves on a periodic basis.
    e. All of the above.

4. Which of the following lower-cost solutions can be used for environmental disinfecting as an alternative to standard disinfectants?
    a. 0.5% sodium hypochlorite solution (diluted bleach)
    b. Alcohol-based hand gels
    c. 0.01% sodium hypochlorite solution (diluted bleach)
    d. Pure chlorine solution

5. What are some factors to consider before recommending quarantine for suspected COVID-19 case?
    a. Will the quarantine location be a safe place for the patient?

b. Will the individual have access to food/water/medications/social support?
c. Will the individual and their caregiver be able to implement necessary infection prevention measures (use of PPE, maintain safe distance from the case, etc.)?
d. All of the above.

6. What is the suggested length of quarantine for healthcare workers who were at HIGH RISK of contracting COVID-19?
    a. 1 day
    b. Until they are no longer symptomatic
    c. 14 days
    d. 7 days

7. Which of the following are recommended prevention efforts that can be implemented in the community?
    a. Social distancing (staying an "arm's length away" from other people)
    b. Staying home from school, work if sick (fever, cough, other respiratory symptoms)
    c. Regular hand washing and good respiratory hygiene
    d. Limiting contact with those who are seriously ill
    e. Avoiding touching the face (in particular eyes, nose, and mouth)
    f. All of the above

8. When using a chlorine solution as an alternative option for hand hygiene and environmental cleaning, which is true?
    a. Being able to detect the smell/odor of chlorine indicates that it is at a safe potency to use for hand hygiene and environmental cleaning.
    b. You can use the same concentration of chlorine solution for both hand hygiene and environmental cleaning.
    c. Chlorine solutions must be made on a daily basis, since they are light sensitive.
    d. You can use chlorine solutions to remove organic soil/bulk matter.
    e. All store bought bleach solutions have the same concentration of sodium hypochlorite, so the same dilution methods can be used.

9. If single rooms are not available for all COVID-19 patients (suspected OR confirmed), then these patients should be grouped together. (True/False)

10. Which of the following precautions does the WHO recommend when providing standard care for suspected/confirmed COVID-19 patients? Select only those that apply.
    a. Standard precautions
    b. Airborne precautions always
    c. Airborne precautions only during aerosolizing procedures
    d. Droplet precautions
    e. Contact precautions
    f. Aseptic precautions
    g. No precautions

Stabilization and Resuscitation Questions

1. In what order should patients be assessed?
    a. Breathing, Circulation, Airway
    b. Airway, Breathing, Circulation
    c. Circulation, Airway, Breathing
    d. Order does not matter

2. You are evaluating the breathing of a patient. They are awake and speaking but you notice their SpO2 is 86%. What is the next step?
    a. Move on to circulation and come back.
    b. Ignore it and move on
    c. Place them on supplemental oxygen
    d. Intubate them immediately

3. A patient arrives in septic shock. You begin antibiotics and have given 30ml/kg of Ringer's lactate. The mean arterial pressure (MAP) is 57. The patient is suspected to have COVID-19 and has been having some difficulty breathing due to the infection. What is the next step?
    a. Give 1L D5 normal saline
    b. Give 2L Ringer's lactate
    c. Begin vasopressors
    d. Give 1L 5% albumin

4. Which of the following medications would be your first choice in septic shock?
    a. Vasopressin
    b. Phenylephrine
    c. Dobutamine
    d. Noradrenaline/Adrenaline

5. True or False: Imaging can confirm COVID-19 infection.
    a. True
    b. False

6. True or False: Using non-invasive ventilation is helpful but can aerosolize COVID-19 particles.
    a. True

b. False

7. You are preparing to intubate a patient in severe respiratory distress who may have COVID-19. What should be your first step?
    a. Making sure you are wearing the appropriate PPE
    b. Check a blood gas
    c. Preoxygenate the patient
    d. Pick up the laryngoscope

8. A confirmed COVID-19 patient has been in your ward for 5 days and is clinically worsening, with a chest film that day concerning for ARDS. What is the appropriate management?
    a. Intubation and mechanical ventilation
    b. No treatment
    c. Antibiotics
    d. Oxygen by nasal cannula

9. You diagnose a patient with severe pneumonia. How do you know it is severe?
    a. The patient is hypoxic to SpO2 85%
    b. The patient has a fever but no other complaints
    c. The patient is not in any respiratory distress
    d. The white blood cell count is extremely high

10. A very sick patient arrives in your hospital. They are barely breathing (8 times a minute) and are very hypoxic. What is the first step in management?
    a. Check their blood pressure
    b. Begin vasopressor therapy
    c. Assess the airway, and attempt to remove any obstruction
    d. Call for a chest x-ray

Diagnosis and Management Questions

1. When working to diagnose patients with COVID-19, samples should regularly be taken from all of the following sources:
    a. Upper respiratory tract
    b. Lower respiratory tract
    c. Stool
    d. Urine
    e. Serum
    f. A &B
    g. A, B & E

h. All of the above

2. True or False: Induced sputum should be obtained from all patients with suspected COVID-19 infection, as this provides the best chance of making the diagnosis.
    a. True
    b. False

3. True or False: In hospitalized patients, repeat testing of upper and lower respiratory tract samples should be performed to confirm viral clearance.
    a. True
    b. False

4. COVID-19 infection may cause which of the following:
    a. Mild uncomplicated illness typically seen with upper respiratory tract infections
    b. ARDS
    c. Sepsis
    d. All of the above

5. True or False: Patients with mild symptoms due to COVID-19 may be cared for at home.
    a. True
    b. False

6. Which of the following are recommended when caring for someone diagnosed with COVID-19 at home:
    a. Place the patient in a well-ventilated single room (i.e., open windows and an open door
    b. Limit patient movement around the house
    c. Minimize time spent in shared spaces, and ensure that those spaces are well ventilated
    d. Household members should stay in a different room
    e. Limit the number of caregivers
    f. All of the above

7. True or False: Mothers who are breastfeeding and are diagnosed with COVID-19 should be told to stop breastfeeding for the health of their child/children.
    a. True
    b. False

8. Supportive care for patients diagnosed with COVID-19 includes all of the following strategies except:
    a. Supplemental oxygen
    b. Intravenous fluids
    c. Empiric antimicrobial therapy
    d. Routine administration of corticosteroids

9. In a COVID-19 patient with hypoxemic respiratory failure and ARDS on mechanical ventilation, which of the following is NOT recommended for treatment?
    a. Tidal volume 6ml/kg
    b. High PEEP

c. Prone positioning
d. Low PEEP

10. True or False: There are currently no specific treatments available for COVID-19.
    a. True
    b. False

Surveillance Questions

1. What is a characteristic of active surveillance?
    a. Diseases are reported by health care providers.
    b. More complete reporting of conditions and estimate of disease frequency.
    c. Simple and inexpensive, requiring few resources.
    d. Limited by possible under-reporting and variability of data.

2. What is FALSE regarding surveillance case definitions:
    a. A set of uniform criteria that is used to define a disease for public health surveillance.
    b. Enables public health officials to classify and count cases consistently, which is particularly important when data is being collected from multiple sites.
    c. Used by healthcare providers for making a clinical diagnosis.
    d. The World Health Organization (WHO) has developed COVID-19 case definitions based on current information

3. A "probable case" of COVID-19, as defined by the World Health Organization (WHO) is:
    a. A patient with acute respiratory illness (that is, fever and at least one sign or symptom of respiratory disease, for example, cough or shortness of breath) AND with no other etiology that fully explains the clinical presentation AND a history of travel to or residence in a country, area or territory that has reported local transmission of COVID-19 disease during the 14 days prior to symptom onset.
    b. A person with laboratory confirmation of infection with the COVID-19 virus, irrespective of clinical signs and symptoms.
    c. Any person who is currently under investigation for having the virus that causes COVID-19, or who was under investigation but tested negative for the virus.
    d. A suspected case for whom the report from laboratory testing for the COVID-19 virus is inconclusive.

4. What group(s) of people are at higher risk for medical complications from COVID-19, and may require enhanced surveillance?
    a. Older adults
    b. Children
    c. People with underlying lung disease
    d. Both a. and c.
    e. All of the above

5. The WHO requests that national authorities report probable and confirmed cases of COVID-19 within how many hours of identification?
    a. 24 hours

b. 48 hours
c. 72 hours
d. 96 hours

6. When reporting COVID-19 surveillance data to the WHO, if the patient's outcome is not available at the time of report submission, what should be done?
    a. Submit the report and then send an update of the report as soon as outcome information is available, or, at the latest, within 30 days of the first report.
    b. Wait to submit the report, as it should be fully completed before being submitted.
    c. Submit the report and then send an update after the pandemic is over.
    d. Complete as much of the report as possible, and submit the final report within 24 hours of case confirmation.

7. What should be included in the weekly aggregated data on COVID-19 provided to the World Health Organization (WHO), if case-based reporting is not feasible?
    a. Number of new confirmed cases.
    b. Number of new COVID-19 cases treated with mechanical ventilation or extracorporeal membrane oxygenation or admitted to an intensive care unit.
    c. Total number of laboratory tests conducted.
    d. Both a. and b.
    e. All of the above.

8. According to the World Health Organization (WHO), who is considered a COVID-19 contact:
    a. Providing direct care for patient with COVID-19 while using proper personal protective equipment.
    b. Sharing a classroom with a patient with COVID-19.
    c. Travelling on an airplane and sitting five seats away from a patient with COVID-19.
    d. All of the above

9. Advising a COVID-19 contact to self-monitor for symptoms and contact their local public health department if they develop symptoms within 14 days after the last exposure is an example of:
    a. Passive follow up
    b. Active follow up
    c. Sentinel follow up
    d. Surveillance follow up

10. True or False: During contact tracing for COVID-19, active follow up is preferred.
    a. True
    b. False

Screening and Triage Questions

1. Strategies to reduce potential spread of COVID-19 in the waiting room include:
    a. Masks for symptomatic patients
    b. Distancing of symptomatic patients at least 1 meter from others
    c. Signs instructing patients how to protect others when they cough
    d. Hand hygiene stations

e. All of the above

2. Screeners should take which of the following precautions:
    a. Mask and face shield or goggles when you are less than 2 meters away from a symptomatic patient.
    b. Hand hygiene before and after patient contact
    c. Maintain a distance of 1 meter when appropriate
    d. All of the above

3. The three steps of screening in the correct order are:
    a. Identify, Immobilize, Inform
    b. Identify, Isolate, Inform
    c. Immobilize, Inform, Identify
    d. Inform, Identify, Isolate

4. Which of the following would meet the current case definition for a “suspected case”?
    a. 61 year old female with nausea, vomiting and diarrhea in a healthcare worker
    b. 27 year old male with cough, congestion with no travel history in a region where there is no community spread of COVID-19
    c. 56 year old male complaining of a sprained ankle with recent travel to Iran
    d. 76 year female with fever and cough after returning from Northern Italy

5. Which of the following symptoms would NOT be consistent with COVID-19:
    a. Localized abdominal pain
    b. Septic shock
    c. Dry cough
    d. Fever and sore throat
    e. All of the above are consistent with COVID-19

6. Where can you find up-to-date information on current community spread of COVID-19?
    a. WHO situation reports
    b. Facebook
    c. WHO Dashboard
    d. A and B
    e. A and C
    f. B and C

7. Which of the following is NOT one of the benefits of utilizing an effective triage system?
    a. Sick patients are recognized quickly and made a priority
    b. When triage identifies a patient who is not high risk, hand hygiene is no longer necessary
    c. Being able to recognize high risk patients quickly on arrival and informing appropriate staff allows the opportunity for better coordination of care.
    d. With COVID-19, certain procedures that aerosolize secretions pose a higher risk to healthcare workers, and additional equipment may be needed for their care.

8. The goal of triage is to:

a. Move the least sick patients back first as they are the fastest to treat.
b. Organize arriving patients in alphabetical order to maintain a clear record
c. Identify patient's acuity level and prioritize care for the sickest.
d. None of the above

9. How long should washing your hands take?
    a. 5-10 seconds
    b. 10-20 seconds
    c. 20-30 seconds
    d. 60-90 seconds

10. What personal protective equipment is not required for caring for patients with COVID-19?
    a. Mask
    b. Gown
    c. Face shield
    d. Booties
    e. All are required.

Operations & Surge Capacity Development Questions

1. What is the definition of a "surge site"?
    a. A site which is used at all times in daily hospital operations
    b. A site at which the surge is occurring
    c. An alternative site for care used to expand capacity
    d. A command center in the hospital for disaster management operations

2. Which of the following is TRUE regarding the use of a "surge site"?
    a. It should be used for all infectious diseases.
    b. They should always be located on a hospital site.
    c. Should be considered when all other options have been exhausted and there are adequate resources to manage it.
    d. All of the above.

3. In a large-scale outbreak, up to 1/3 of medical staff could be also become ill or need to take time off to care for their own families.
    a. True
    b. False

4. Which of the following should be included in a Medical Surge Operations Plan?
    a. Appointment/creation of a central command post
    b. Plans to train staff on infection prevention control and new screening and triage protocols
    c. Routine hospital care and protocols
    d. All of the above
    e. A & B

5. It is preferred that screening during a medical surge response of a highly contagious infectious disease should take place onsite.
    a. True
    b. False

6. Which of the following is FALSE during a surge in patients due to an infectious disease pandemic?
    a. Mainly highly specialized supplies will be utilized, resulting in shortages
    b. Supplies in high demand may need to be locked up to protect against theft
    c. It may be necessary to look outside the local area to source needed laboratory supplies
    d. Policies and practices may need to be enacted to limit use of supplies

7. Triage during an emerging infectious disease outbreak is the same as triage during a mass casualty incident.
    a. True
    b. False

Risk Communication Questions

1. Who is responsible for risk communication?
    a. Local and governmental officials.
    b. Influential individuals and groups within a community.
    c. Health care workers and hospital management.
    d. Non-governmental organizations (NGOs) and community organizations.
    e. Both a. and c.
    f. All of the above

2. How can risk communication build trust?
    a. Avoid discussing areas of uncertainty.
    b. Inclusion of at-risk and affected populations.
    c. Limit public dialogue to avoid confusion.
    d. Dissemination of information once a topic is well understood.

3. Which two teams within the World Health Organization (WHO) are identifying potentially harmful myths, refuting these rumors with evidence-based information, and disseminating this information widely? (Choose two answers)
    a. Social media team
    b. Risk response team
    c. Internet strike team
    d. Outreach communication
    e. Technical risk communication

For questions 4-10, to what outbreak situation does each actionable guidance for risk communication and community engagement (RCCE) readiness and response to COVID-19 belong (Choose a, b, or c for each question)::

a) Countries preparing for a possible patient with COVID-19.

b) Countries where limited patients with COVID-19 have been identified.
c) Countries with many patients with COVID-19.

4. Assign individuals responsibilities for communication within and between each response agency, as well as communication to the public.
5. Diversify channels, utilize partners' strengths and outreach capacities, and cross-link materials as appropriate to broadly disseminate health messages and gain new audiences.
6. Develop communication roles and responsibilities, ideally using standard operating procedures (SOPs), to include which partner will speak first on specific issues.
7. Develop robust working relationships with the media by providing regular updates on ongoing preparedness measures and public health advice.
8. Update skills training as new methodologies and campaigns are created.
9. Identify and train surge staff.
10. Identify the typical target audiences of a RCCE plan and the relevant channels of communication that will be used.

11. What is an example of 'People-First' Language?
    a. Talking about the Wuhan Virus.
    b. Talking about COVID-19 cases
    c. Talking about people who have COVID-19
    d. Talking about the case fatality rate

12. Social stigma related to health can lead people to:
    a. Hide signs of illness to avoid discrimination.
    b. Seek out specialty medical care.
    c. More quickly adopt healthy behaviors.
    d. Discuss their illness on social media.

Answer Key - Background

11. Where is COVID-19 thought to have originated?
    a. Wuhan, China
    b. Saudi Arabia
    c. New York, United States
    d. Tokyo, Japan
    e. Milan, Italy

    COVID-19 was first identified in Wuhan, China in December 2019.

12. What is thought to be the major mode of transmission of COVID-19?
    a. Air-borne transmission
    b. Blood-borne transmission
    c. Transfer of respiratory droplets
    d. Fecal-oral transmission

    Although it is believed COVID-19 could be transmissible through other bodily fluids, the major mode of transmission is respiratory droplets.

13. Which of the following can affect the R0/overall transmissibility of COVID-19?
    a. Proportion of population susceptible
    b. Biological characteristics of pathogen
    c. Public health measures implemented (quarantines, etc.)
    d. Mode of transmission
    e. All of the above

    The R0 is the average number of people who will catch a disease from one contagious person. Depending on the factors above, the R0 of a given outbreak can vary.

14. Which of the following are common symptoms reported in cases of COVID-19?
    a. Fever
    b. Shortness of breath
    c. Diarrhea
    d. Dry cough
    e. All of the above

    All of these symptoms are commonly observed in COVID-19. Other symptoms can include sore throat, muscle aches, fatigue, and runny nose.

15. COVID-19 is a zoonotic infection, meaning it likely originated from an animal reservoir. (True / False)

    The SARS CoV 2 is currently thought to have originated in bats and been transmitted to humans through a reservoir animal such as a pangolin.

16. SARS-CoV-1 (from the 2002-2003 outbreak) and SARS-CoV-2 (from today's outbreak) share the following trait:
    a. They both bind to the ACE2 receptor in the respiratory tract using "spike proteins" - TRUE
    b. They are both parasitic infections (FALSE – they are viral infections)

c. They both originated from Saudi Arabia – (FALSE – they both originated from China)
d. They have similar case-fatality rates (FALSE – SARS ~ 11%, COVID-19 ~ 3.4%)
e. They both are spread by fecal-oral transmission (FALSE – respiratory droplet transmission)

17. Who are most likely to experience severe disease from COVID-19?
    a. Children
    b. Young adults
    c. Older adults with underlying health conditions
    d. Everyone is equally likely to experience severe disease

    Age is correlated with more severe illness in COVID-19, as well as health problems such as diabetes, heart disease, and lung disease.

18. Most people who get COVID-19 infection require hospitalization.
    False

19. Which of the following tests should ideally be used to confirm diagnosis of COVID-19?
    a. RT-PCR of respiratory specimen
    b. RT-PCR of blood specimen
    c. CT scan of chest
    d. Evidence of clinical symptoms

    Although other tests such as blood work showing lymphopenia or a CT scan showing groundglass opacities may be suggestive of COVID-19, it should be confirmed through a respiratory specimen swab.

20. Which of the following challenges might complicate vaccine development?
    a. Vaccine development is high risk and very expensive for the companies involved
    b. The SARS-CoV-2 virus may mutate which could affect the efficacy of the vaccine
    c. Vaccine development may take several years before it is readily available to slow transmission
    d. All of the above

Answer Key – Infection Prevention and Control

1. Airborne precautions should be employed at all times when a suspected COVID-19 case is present. (True/False)
   False - only when performing aerosolizing procedures.

2. Hand hygiene should occur regularly at all times, even when wearing PPE. (True/False)
   True – remember to perform hand hygiene prior to doffing PPE.

3. When developing an Infection Prevention and Control team (IPC), the following actions should be taken:
    a. Assignment of specific titles, roles, and responsibilities to each member of the team.
    b. Conducting ongoing training and status updates via a clear line of communication.
    c. Developing a risk assessment plan based on guidance from the WHO.

d. Updating healthcare workers and members of the team as the outbreak evolves on a periodic basis.
e. All of the above.

4. Which of the following lower-cost solutions can be used for environmental disinfecting as an alternative to standard disinfectants?
    a. 0.5% sodium hypochlorite solution (diluted bleach)
    b. Alcohol-based hand gels
    c. 0.01% sodium hypochlorite solution (diluted bleach)
    d. Pure chlorine solution

    Alcohol-based hand gels with 60% alcohol or more are effective for hand hygiene, however 0.5% sodium hypochlorite solution is recommended as a lower cost solution for environmental disinfecting.

5. What are some factors to consider before implementing quarantine for suspected COVID-19 case?
    a. Will the quarantine location be a safe place for the patient?
    b. Will the individual have access to food/water/medications/social support?
    c. Will the individual and their caregiver be able to implement necessary infection prevention measures (use of PPE, maintain safe distance from the case, etc.)?
    d. All of the above

6. What is the suggested length of quarantine for healthcare workers who were at HIGH RISK of contracting COVID-19?
    a. 1 day
    b. Until they are no longer symptomatic
    c. 14 days
    d. 7 days

    All persons who are contacts of confirmed COVID-19 cases (not just healthcare workers) are recommended by the World Health Organization to be quarantined for 14 days.
7. Which of the following are recommended prevention efforts that can be implemented in the community?
    a. Social distancing (staying an “arm’s length away” from other people)
    b. Staying home from school, work if sick (fever, cough, other respiratory symptoms)
    c. Regular hand washing and good respiratory hygiene
    d. Limiting contact with those who are seriously ill
    e. Avoiding touching the face (in particular eyes, nose, and mouth)
    f. All of the above

8. When using a chlorine solution as an alternative option for hand hygiene and environmental cleaning, which is true?
    a. Being able to detect the smell/odor of chlorine indicates that it is at a safe potency to use for hand hygiene and environmental cleaning.
    b. You can use the same concentration of chlorine solution for both hand hygiene and environmental cleaning.
    c. Chlorine solutions must be made on a daily basis, since they are light sensitive.
    d. You can use chlorine solutions to remove organic soil/bulk matter.

e. All store bought bleach solutions have the same concentration of sodium hypochlorite, so the same dilution methods can be used.

The smell of chlorine solution is not an accurate method to determine the potency – chlorine odor can be detected even at a low concentration. The recommended concentration for chlorine solutions used for environmental disinfecting is higher than those used for hand hygiene. Chlorine solutions are inactivated by the presence of organic matter.

9. If single rooms are not available for all COVID-19 patients (suspected OR confirmed), then these patients should be grouped together. (True/False)
   True – if patients must be grouped together on a ward due to limited available space, it is recommended to keep patients at least 1 meter apart.

10. Which of the following precautions does the WHO recommend when providing standard care for suspected/confirmed COVID-19 patients? Select ALL that apply.
    a. Standard precautions
    b. Airborne precautions always
    c. Airborne precautions only during aerosolizing procedures
    d. Droplet precautions
    e. Contact precautions
    f. Aseptic precautions
    g. No precautions

    The WHO recommends always following standard precautions, droplet and contact precautions for suspected or confirmed COVID-19 cases. Airborne precautions such as negative pressure room and N95 mask use are recommended if undertaking aerosolizing procedures such as orotracheal intubation or bronchoscopy.

Answer Key - Stabilization and Resuscitation

1. In what order should patients be assessed?
   a. Breathing, Circulation, Airway
   b. Airway, Breathing, Circulation
   c. Circulation, Airway, Breathing
   d. Order does not matter

   The correct order is to assess the airway first and address it is there is airway compromise.

2. You are evaluating the breathing of a patient. They are awake and speaking but you notice their SpO2 is 86%. What is the next step?
   a. Move on to circulation
   b. Wait and see if it improves
   c. Place them on supplemental oxygen
   d. Intubate them immediately

If a patient is hypoxic, that needs to be addressed before moving on, but in the situation described, intubation is not indicated.

3. A patient arrives in septic shock. You begin antibiotics and have given 30ml/kg of Ringer's lactate. The mean arterial pressure (MAP) is 57. The patient is suspected to have COVID-19 and has been having some difficulty breathing due to the infection. What is the next step?
    a. Give 1L D5 normal saline
    b. Give 2L Ringer's lactate
    c. Begin vasopressors
    d. Give 1L 5% albumin

    If a patient is in septic shock, and the MAP is less than 65 despite initial fluid resuscitation, it is recommended to start vasopressors.

4. Which of the following medications would be your first choice in septic shock?
    a. Vasopressin
    b. Phenylephrine
    c. Dobutamine
    d. Noradrenaline/Adrenaline

    Noradrenaline is recommended as an initial choice in septic shock if available. Adrenaline is recommended in pediatric patients.

5. True or False: Imaging can confirm COVID-19 infection.
    a. True
    b. False

    Imaging studies can be suggestive of COVID-19 by showing bilateral interstitial pneumonia or groundglass opacities, but these tests cannot confirm infection.

6. True or False: Using non-invasive ventilation is helpful but can aerosolize COVID-19 particles.
    a. True
    b. False

    Non-invasive ventilation measures such as BiPAP may put healthcare workers more at risk by aerosolizing the virus, and respiratory failure in COVID-19 can progress rapidly, so early intubation should be considered.

7. You are preparing to intubate a patient in severe respiratory distress. What is the very first step?
    a. Making sure you are wearing the appropriate PPE

b. Check a blood gas
c. Preoxygenate the patient
d. Pick up the laryngoscope

It is important not to skip safety precautions, apply PPE to protect yourself.

8. A confirmed COVID-19 patient has been in your ward for 5 days and is clinically worsening, with a chest film that day concerning for ARDS. What is the appropriate management?
    a. Intubation and mechanical ventilation
    b. No treatment
    c. Antibiotics
    d. Oxygen by nasal cannula

    Intubation and mechanical ventilation are the mainstay of ARDS treatment.

9. You diagnose a patient with severe pneumonia. How do you know it is severe?
    a. The patient is hypoxic to SpO2 85%
    b. The patient has a fever but no other complaints
    c. The patient is not in any respiratory distress
    d. The white blood cell count is extremely high

    Severe pneumonia can be diagnosed by tachypnea >30, the presence of respiratory distress, or hypoxia.

10. A very sick patient arrives in your hospital. They are barely breathing (8 times a minute) and are very hypoxic. What is the first step in management?
    a. Check their blood pressure
    b. Begin vasopressor therapy
    c. Assess the airway, and attempt to remove any obstruction
    d. Call for a chest x-ray

    The first step is always to assess the airway and address airway compromise.

Answer Key – Diagnosis & Management

1. When working to diagnose patients with COVID-19, samples should regularly be taken from all of the following sources:
    a. Upper respiratory tract
    b. Lower respiratory tract
    c. Stool
    d. Urine
    e. Serum
    f. A &B

g. A, B & E
h. All of the above

Respiratory tract samples are routinely recommended. Serum testing is only currently recommended if RT-PCR is not available.

2. True or False: Induced sputum should be obtained from all patients with suspected COVID-19 infection, as this provides the best chance of making the diagnosis.
    a. True
    b. False

False – induced sputum is not recommended in patients with suspected COVID-19.

3. True or False: In hospitalized patients, repeat testing of upper and lower respiratory tract samples should be performed to confirm viral clearance.
    a. True
    b. False

Retesting to confirm viral clearance is recommended at least every 2 to 4 days, depending on resource availability.

4. COVID-19 infection may cause which of the following:
    a. Mild uncomplicated illness typically seen with upper respiratory tract infections
    b. ARDS
    c. Sepsis
    d. All of the above

The majority of COVID-19 cases are mild, but it can also cause sepsis, septic shock, and ARDS.

5. True or False: Patients with mild symptoms due to COVID-19 may be cared for at home.
    a. True
    b. False

True – patients with mild illness are advised to isolate until the illness has resolved.

6. Which of the following is recommended when caring for someone diagnosed with COVID-19 at home:
    a. Place the patient in a well-ventilated single room (i.e., open windows and an open door
    b. Limit patient movement around the house
    c. Minimize time spent in shared spaces, and ensure that those spaces are well ventilated
    d. Household members should stay in a different room
    e. Limit the number of caregivers
    f. All of the above

All of these measures are important for infection prevention and control.

7. True or False: Mothers who are breastfeeding and are diagnosed with COVID-19 should be told to stop breastfeeding for the health of their child/children.
    a. True
    b. False

False – mothers should be encouraged to continue breastfeeding, but should use a mask and hand hygiene before contact with the baby.

8. Supportive care for patients diagnosed with COVID-19 includes all of the following strategies except:
    a. Supplemental oxygen
    b. Intravenous fluids
    c. Empiric antimicrobial therapy
    d. Routine administration of corticosteroids

    Corticosteroids are not recommended with COVID-19 infection unless indicated for another reason such as asthma.

9. In a COVID-19 patient with hypoxemic respiratory failure and ARDS on mechanical ventilation, which of the following is NOT recommended for treatment?
    a. Tidal volume 6ml/kg
    b. High PEEP
    c. Prone positioning
    d. Low PEEP

With hypoxemic respiratory failure and ARDS, high PEEP is recommended rather than low PEEP.

10. True or False: There are currently no specific treatments available for COVID-19.
    a. True
    b. False

True – a number of different treatments such as hydroxychloroquine, remdesivir, and lopinivir/ritonavir have been studied, but no specific treatment currently has enough scientific evidence to be routinely recommended.

Answer Key - Surveillance

1. What is a characteristic of active surveillance?
    a. Diseases are reported by health care providers.
    b. More complete reporting of conditions and estimate of disease frequency.
    c. Simple and inexpensive, requiring few resources.
    d. Limited by possible under-reporting and variability of data.

    Active surveillance involves reaching out to healthcare providers and facilities to collect information on cases. It typically results in more complete reporting and better estimates of disease frequency. It is more complex and costly than passive surveillance, but it is recommended for epidemics such as COVID-19.

2. What is FALSE regarding surveillance case definitions:
    a. A set of uniform criteria that is used to define a disease for public health surveillance.
    b. Enables public health officials to classify and count cases consistently, which is particularly important when data is being collected from multiple sites.
    c. Used by healthcare providers for making a clinical diagnosis.
    d. Not intended to be used to determine a patient's treatment.

    Surveillance case definitions are used to classify cases consistently for data collection, but are not intended for use in making clinical diagnoses or decisions on treatment.

3. A "probable case" of COVID-19, as defined by the World Health Organization (WHO) is:
    a. A patient with acute respiratory illness (that is, fever and at least one sign or symptom of respiratory disease, for example, cough or shortness of breath) AND with no other etiology that fully explains the clinical presentation AND a history of travel to or residence in a country, area or territory that has reported local transmission of COVID-19 disease during the 14 days prior to symptom onset.
    b. A person with laboratory confirmation of infection with the COVID-19 virus, irrespective of clinical signs and symptoms.
    c. Any person who is currently under investigation for having the virus that causes COVID-19, or who was under investigation but tested negative for the virus.
    d. A suspected case for whom the report from laboratory testing for the COVID-19 virus is inconclusive.

    The definition listed in answer (a) is for suspected cases, not probable cases. The definition listed in answer (b) is not used as a case definition by the WHO. The definition listed in answer (c) is for PUI, not probable cases.

4. What group(s) of people are at higher risk for medical complications from COVID-19, and may require enhanced surveillance?
    a. Older adults
    b. Children
    c. People with underlying lung disease
    d. Both a. and c.
    e. All of the above

    Children have much less risk for severe illness from COVID-19.

5. The WHO requests that national authorities report probable and confirmed cases of COVID-19 within how many hours of identification?
    a. 24 hours
    b. 48 hours
    c. 72 hours
    d. 96 hours

    If reporting cases is not feasible, the WHO requests that countries provide daily and weekly aggregated data.

6. When reporting COVID-19 surveillance data to the WHO, if the patient's outcome is not available at the time of report submission, what should be done?
    a. Submit the report and then send an update of the report as soon as outcome information is available, or, at the latest, within 30 days of the first report.
    b. Wait to submit the report, as it should be fully completed before being submitted.
    c. Submit the report and then send an update after the pandemic is over.
    d. Complete as much of the report as possible, and submit the final report within 24 hours of case confirmation.

    The report to the WHO should include as much data as possible, but updates on patient outcomes can be submitted within 30 days at the latest if not available at the time of initial report submission.

7. What should be included in the weekly aggregated data on COVID-19 provided to the World Health Organization (WHO), if case-based reporting is not feasible?
    a. Number of new confirmed cases.
    b. Number of new COVID-19 cases treated with mechanical ventilation or extracorporeal membrane oxygenation or admitted to an intensive care unit.
    c. Total number of laboratory tests conducted.
    d. Both a. and b.
    e. All of the above.

    The weekly aggregated data requested by the WHO includes all of the above, as well as other data such as new deaths, new probable cases, and new COVID-19 cases that were hospitalized.

8. According to the World Health Organization (WHO), who is considered a COVID-19 contact:
    a. Providing direct care for patient with COVID-19 while using proper personal protective equipment.
    b. Sharing a classroom with a patient with COVID-19.
    c. Travelling on an airplane and sitting five seats away from a patient with COVID-19.
    d. All of the above

    COVID-19 contacts must have been in close proximity to a patient with COVID-19, having less than 1 meter of separation from the patient, such as in a workplace, a classroom, a household, or a gathering. Travelling with a patient can make a person a contact, but 5 rows is more than 1 meter separation. Recirculated air in planes passes through a HEPA filter and is not thought to be risky to other passengers.

9. Advising a COVID-19 contact to self-monitor for symptoms and contact their local public health department if they develop symptoms within 14 days after the last exposure is an example of:
    a. Passive follow up
    b. Active follow up
    c. Sentinel follow up
    d. Surveillance follow up

10. True or False: During contact tracing for COVID-19, active follow up is preferred.
    a. True
    b. False

    Active follow up is more effective, so it is preferred for COVID-19 contact tracing if sufficient resources are available to do so.

Answer Key – Screening and Triage

1. Strategies to reduce potential spread of COVID-19 in the waiting room include:
    a. Masks for symptomatic patients
    b. Distancing of symptomatic patients at least 1 meter from others
    c. Signs instructing patients how to protect others when they cough
    d. Hand hygiene stations
    e. All of the above

2. Screeners should take which of the following precautions:

a. Mask and face shield or goggles when you are less than 2 meters away from a symptomatic patient.
b. Hand hygiene before and after patient contact
c. Maintain a distance of 1 meter when appropriate
d. All of the above

3. The three steps of screening in the correct order are:
    a. Identify, Immobilize, Inform
    b. Identify, Isolate, Inform
    c. Immobilize, Inform, Identify
    d. Inform, Identify, Isolate

    During screening, one must identify patients who have symptoms of potential COVID-19 infection, then apply appropriate infection prevention and control protocols by isolating. The infection prevention team, local department or ministry of health, and other public health authorities should be informed.

4. Which of the following would meet the current case definition for a "suspected case"?
    a. 61 year old female with nausea, vomiting and diarrhea in a healthcare worker
    b. 27 year old male with cough, congestion with no travel history in a region where there is no community spread of COVID-19
    c. 56 year old male complaining of a sprained ankle with recent travel to Iran
    d. 76 year female with fever and cough after returning from Northern Italy

    The case definition for a suspected case includes acute or severe acute respiratory tract infection (sudden onset of at least one of the following: cough, fever, shortness of breath), with no other etiology that fully explains the presentation, and a history of travel or residence in a country/area with community transmission within 14 days, or having been in close contact with a person with known or probable COVID-19.

5. Which of the following symptoms is NOT consistent with COVID-19:
    a. Localized abdominal pain
    b. Septic shock
    c. Cough and fever
    d. Pneumonia
    e. All of the above are consistent with COVID-19

    Fever, cough, and shortness of breath are some of the most common symptoms of COVID-19. It can also present with GI symptoms like diarrhea, but localized abdominal pain is not typically present.

6. Where can you find up-to-date information on current community spread of COVID-19?
    a. WHO situation reports
    b. Facebook
    c. WHO Dashboard
    d. A and B
    e. A and C
    f. B and C

    Social media is not a recommended source for the most up to date and accurate information on COVID-19 spread.

7. The goal of triage is to:
    a. Move the least sick patients back first as they are the fastest to treat.
    b. Organize arriving patients in alphabetical order to maintain a clear record.
    c. Identify patient's acuity level and prioritize care for the sickest.
    d. None of the above

    Triage involves identifying and treating the most sick patients first.

8. How long should washing your hands take?
    a. 5-10 seconds
    b. 10-20 seconds
    c. 20-30 seconds
    d. 60-90 seconds

    The WHO and the CDC recommend 20-30 seconds for hand washing based on the limited evidence available.

9. What personal protective equipment is not required for caring for patients with COVID-19?
    a. Mask
    b. Gown
    c. Face shield
    d. Booties
    e. All are required.

    Booties are not part of the recommendations for required PPE for COVID-19, although they have been utilized in some care settings.

10. Which of the following is NOT one of the benefits of utilizing an effective triage system?
    a. Sick patients are recognized quickly and made a priority
    b. When triage identifies a patient who is not high risk, hand hygiene is no longer necessary
    c. Being able to recognize high risk patients quickly on arrival and informing appropriate staff allows the opportunity for better coordination of care.
    d. With COVID-19, certain procedures that aerosolize secretions pose a higher risk to healthcare workers, and additional equipment may be needed for their care.

    Hand hygiene is always important in a healthcare setting regardless of the triage system. The other statements are all benefits of an effective triage system.

Answer Key – Operations & Surge Capacity Development

1. What is the definition of a "surge site"?
    a. A site which is used at all times in daily hospital operations
    b. A site at which the surge is occurring
    c. An alternative site for care used to expand capacity
    d. A command center in the hospital for disaster management operations

    A surge site is a location that can be used for medical care during times when the need for care outstrips the available supply at routinely used sites, such as in an infectious disease epidemic.

2. Which of the following is TRUE regarding the use of a "surge site"?

a. It should be used for all infectious diseases.
b. They should always be located on a hospital site.
c. Should be considered when all other options have been exhausted and there are adequate resources to manage it.
d. All of the above.

A surge site is not necessary for all infectious diseases. It can be located in an alternative site away from the hospital, like a tent or a stadium. If resources at available hospitals are overwhelmed it is an option to be considered.

3. In a large-scale outbreak, up to 1/3 of medical staff could be also become ill or need to take time off to care for their own families.
    a. True
    b. False

    True – disaster planning for operations during a large-scale outbreak should take into account that a significant percentage of staff may not be available to work.

4. Which of the following should be included in a Medical Surge Operations Plan?
    a. Appointment/creation of a central command post
    b. Plans to train staff on infection prevention control and new screening and triage protocols
    c. Routine hospital care and protocols
    d. All of the above
    e. A & B

    A medical surge operation plan should take into account all of these factors and should be created as part of hospital disaster preparedness activities prior to the start of a surge event.

5. It is preferred that screening during a medical surge response of a highly contagious infectious disease should take place onsite.
    a. True
    b. False

    Screening should ideally not take place onsite, to limit potential for disease spread. Virtual or phone screening is preferred.

6. Which of the following is FALSE during a surge in patients due to an infectious disease pandemic?
    a. Mainly highly specialized supplies will be utilized, resulting in shortages
    b. Supplies in high demand may need to be locked up to protect against theft
    c. It may be necessary to look outside the local area to source needed laboratory supplies
    d. Policies and practices may need to be enacted to limit use of supplies

    Everyday supplies will likely be used at increased frequency in an infectious disease pandemic, not just highly specialized supplies.

7. Triage during an emerging infectious disease outbreak is the same as triage during a mass casualty incident.
    a. True
    b. False

Triage during a mass casualty incident typically involves rapid assessment of a large number of patients, oftentimes with traumatic injuries. During an infectious disease outbreak different protocols will be used to ensure infection prevention and control.

Answer Key – Risk Communication

1. Who is responsible for risk communication?
    a. Local and governmental officials.
    b. Influential individuals and groups within a community.
    c. Health care workers and hospital management.
    d. Non-governmental organizations (NGOs) and community organizations.
    e. Both a. and c.
    f. All of the above

Risk communication involves many different players, not just governmental agencies and elected officials but all community leaders and influencers play a role.

3. How can risk communication build trust?
    a. Avoid discussing areas of uncertainty.
    b. Inclusion of at-risk and affected populations.
    c. Limit public dialogue to avoid confusion.
    d. Dissemination of information only once a topic is well understood.

Risk communication should involve early and frequent dissemination of information to build trust, and should acknowledge areas of uncertainty.

4. What two teams within the World Health Organization (WHO) are identifying potentially harmful myths, refuting these rumors with evidence-based information, and disseminating this information widely?
    a. Social media teams
    b. Risk response team
    c. Internet strike team
    d. Outreach communication
    e. Technical risk communication

The World Health Organization social media team and technical risk communication teams are working to combat false information being shared online.

For questions 4-10, to what outbreak situation does each actionable guidance for risk communication and community engagement (RCCE) readiness and response to COVID-19 belong (Choose a, b, or c for each question):

a) Countries preparing for a possible patient with COVID-19.
b) Countries where limited patients with COVID-19 have been identified.
c) Countries with many patients with COVID-19.

5. Activate the RCCE plan, release updates reflecting the current situation
6. Monitor affected communities and identify barriers to following health guidance
7. Develop communication roles and responsibilities, determine what training will be needed
8. Prepare communication templates to be ready to release initial communications

9. Formulate guidance based on the public's concerns, and disseminate through a variety of channels
10. Identify and train surge staff.
11. Identify the typical target audiences of a RCCE plan and the relevant channels of communication that will be used.

Answers: 4. (b), 5. (c), 6. (a), 7. (a), 8. (c), 9. (b), 10. (a)

12. What is an example of 'People-First' Language?
    a. Talking about the Wuhan Virus
    b. Talking about COVID-19 cases
    c. Talking about people who have COVID-19
    d. Talking about the case fatality rate

    People-First language avoids stigmatizing particular regions or groups of people, and avoids dehumanizing descriptions such as referring to patients as "cases" or "suspects". It is recommended to focus on prevention and actions people can take instead of on deaths.

13. Social stigma related to health can lead people to:
    a. Hide signs of illness to avoid discrimination.
    b. Seek out specialty medical care.
    c. More quickly adopt healthy behaviors.
    d. Discuss their illness on social media.

    Stigma can work against effective infection control by discouraging people from getting testing and care. Steps should be taken to combat stigma and support stigmatized groups or people.

Appendix C: Rational Use of PPE Reference Table

Setting	Target personnel or patients	Activity	Type of PPE or procedure
Healthcare facilities			
Inpatient facilities			
Patient room	Healthcare workers	Providing direct care to COVID-19 patients.	Medical mask Gown Gloves Eye protection (goggles or face shield).
		Aerosol-generating procedures performed on COVID-19 patients.	Respirator N95 or FFP2 standard, or equivalent. Gown Gloves Eye protection Apron
	Cleaners	Entering the room of COVID-19 patients.	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
	Visitors[b]	Entering the room of a COVID-19 patient	Medical mask Gown Gloves
Other areas of patient transit (e.g., wards, corridors).	All staff, including healthcare workers.	Any activity that does not involve contact with COVID-19 patients.	No PPE required
Triage	Healthcare workers	Preliminary screening not involving direct contact[c].	Maintain spatial distance of at least 1 m. No PPE required
	Patients with respiratory symptoms.	Any	Maintain spatial distance of at least 1 m. Provide medical mask if tolerated by patient.
	Patients without respiratory symptoms.	Any	No PPE required
Laboratory	Lab technician	Manipulation of respiratory samples.	Medical mask Gown Gloves Eye protection (if risk of splash)
Administrative areas	All staff, including healthcare workers.	Administrative tasks that do not involve contact with COVID-19 patients.	No PPE required

"Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19)," the World Health Organization.
https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf