

SURVEILLANCE STANDARD OPERATING PROCEDURES FOR COVID-19



Adapted May 20



Table of Contents

Acronyms	3
1.0 INTRODUCTION	6
1.1 Background.....	6
1.2 Etiology	6
1.3 Epidemiology	6
1.4 Clinical Features	7
1.5 Laboratory Diagnosis	Error! Bookmark not defined.
2.0 INTEGRATED DISEASE SURVEILLANCE AND RESPONSE & COVID-19.....	8
2.1 Surveillance Goal	8
3. 0 IDENTIFY CASES AND EVENTS BY USING THE OUTBREAK CASE DEFINITIONS.....	8
3.1 Case definitions	8
3.2 Epidemic threshold.....	9
3.3 Case Investigation for Contact Identification and Listing	11
3.4 Contact Tracing	13
3.5 Contact Classification.....	13
3.6 Contact Monitoring	14
3. 7 Point of Entry Screening and Referral.....	15
3.8 Active case finding and reporting.....	16
4. 0 REPORT SUSPECTED CASES, CONDITIONS OR EVENTS TO THE NEXT LEVEL THROUGH THE SURVEILLANCE REPORTING STRUCTURE.....	16
5.0 ANALYSE AND INTERPRET DATA.....	17
6.0 INVESTIGATE SUSPECTED CASES OR EVENTS	17
7.0 PREPARE RAPID RESPONSE TEAM (RRT TO RESPOND TO COVID-19 OUTBREAKS. Error! Bookmark not defined.	
8.0 RESPOND TO COVID-19 OUTBREAKS.....	18
9.0. PROVIDE FEEDBACK TO ALL LEVELS	19
10.0 EVALUATE THE SYSTEM	19
ANNEXES	19
Annex 1: Flow chart for responding to COVID-19 alerts, Epi-surveillance COVID-19 response, Liberia, April 2, 2020	19
Annex 2: Process flow for the detection and reporting of a suspected COVID-19 case.....	0
Annex 3: POE alert Trigger Notification Form.....	0
Annex 4: Case investigation form	3
The First Few X (FFX): Cases and contact investigation protocol for 2019-novel coronavirus	8
Annex 5: COVID-19 Contact Line list.....	1
ANNEX 6: COVID -19 DAILY CONTACT MONITORING TOOL.....	3
ANNEX 7: COVID -19 DAILY CONTACT MONITORING TOOL.....	4

Acronyms

AFENET: African Field Epidemiology Network

COVID-19:	Coronavirus disease 2019
CRRT:	County Rapid Response Team
FFX:	First Few Cases
IDSR:	Integrated Disease Surveillance and Response
MERS:	Middle East Respiratory Syndrome
MoH:	Ministry of Health
NPHIL:	National Public Health Institute of Liberia
NRRT:	National Rapid Response Team
PHEIC:	Public Health Emergency of International Concern
POE:	Point of Entry
RNA Virus:	Ribonucleic Acid Virus
RT-PCR:	Real Time Reverse Transcription Polymerase Chain Reaction
RRT:	Rapid Response Team
SOP:	Standard Operating Procedures
SARS-CoV-2:	Severe Acute Respiratory Syndrome Coronavirus 2
WHO:	World Health Organization
US CDC:	United States Centers for Disease Control and Prevention

Contributing Authors

NPHIL

Thomas Knue Nagbe

Dr. Ralph W. Jetoh

Advertus Nyan Mianah

Alberta B. Corvah

Emmanuel Dwalu

Godwina B. Williams

Nathaniel K. Doville

WHO

US CDC

AFENET

Purpose of the SOP

This document is a standard operating procedure (s) for COVID-19 surveillance in Liberia. The content is intended to inform surveillance at national and county, health facility, community, and at points of entry, referencing the 3rd Edition of the Liberia IDSR Technical Guidelines (2019).

How to use the SOP

Reporting sites are integral part of Liberia's public health system. Reporting sites in Liberia are areas of focus for disease detection, case management and response. This SOP gives step-by-step instructions and guidance for health workers to detect, report, investigate COVID-19/other respiratory illnesses, conduct contact tracing and maintain surveillance before, during and after the COVID-19 outbreak.

Each section provides details of key procedures that should occur within each of the core functions. Each section also references annexes, which provide, reporting templates, data collection and reporting forms, and other related instruments.

1.0 INTRODUCTION

1.1 Background

The coronavirus disease 2019 (COVID-19) is a disease of global concern. On December 31, 2019, the World Health Organization (WHO) was informed of 44 cases of pneumonia of unknown microbial etiology associated with Wuhan City, Hubei Province, China (Zhu et al., 2020). Most of the cases in the outbreak reported a link to a large seafood and live animal market (Huanan South China Seafood Market) (Zhu et al., 2020).

WHO announced on January 9, 2020, that a novel coronavirus that had not been previously identified in humans had been detected in samples taken from cases in Wuhan City. Laboratory tests ruled out SARS-CoV, MERS-CoV, influenza, avian influenza, and other common respiratory pathogens (Corman, Gralinski & Menachery, 2020). On January 30, 2020, it was declared as a Public Health Emergency of International Concern (PHEIC) and as a Pandemic on March 11, 2020 by WHO (Ahmad et al., 2020 & Abebe et al., 2020).

1.2 Etiology

Coronavirus disease 2019 (COVID-19) is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is a positive-sense single-stranded RNA virus that is contagious in humans. ((WHO, 2021; Diaz, Appiah, & Askie, 2021). Coronaviruses are a large family of viruses, some of which cause illness in people (e.g., common cold, severe acute respiratory syndrome Middle East respiratory syndrome [MERS]), and others that circulate among mammals and birds (Kim et al., 2020). Rarely, animal coronaviruses can spread to humans, and then spread between people, as was the case with MERS and SARS (Corman et al., 2020). Morphologically, the viruses are large spherical particles with bulbous surface projections that form a corona around the particles in electron micrographs (Kim et al., 2020).

The primary mode of transmission is person to person through droplets that occurred during coughing or sneezing, through personal contact: shaking hands, or by touching contaminated objects. Human spread can be prevented by washing hand often with soap and water for at least 20 s, especially after going to the bathroom; before eating; and after blowing your nose, coughing, or sneezing; use an alcohol-based hand sanitizer containing at least 60% alcohol, if soap and water are not available; avoid touching your eyes, nose, or mouth with unwashed hands; and avoid close contact with anyone showing symptoms of respiratory illness such as coughing and sneezing (Abebe et al., 2020). The Real-time reverse-Transcription Polymerase Chain Reaction (rRT-PCR) screening is the standard laboratory test for the diagnosis of COVID-19 (Shishir Paudel, Ganesh Dangal, Anisha Chalise, Tulsi Ram Bhandari, 2020).

1.3 Epidemiology

Globally, as of 12 May 2021, about 159,319,384 confirmed cases of COVID-19 including 3,311,780 deaths have been reported with 1,264,164,553 vaccine doses administered (WHO, 2021).

On 16th March 2020, Liberia recorded its first case of COVID-19 in a 46-year old Liberian male who had returned from Switzerland. Since the outbreak in Liberia (March 16, 2020 – April 25, 2021), a total of two thousand ninety-eight (2,098) confirmed cases recorded including 85 deaths.

The cornerstone of the response in Liberia is to detect, confirm, isolate, and manage every case.

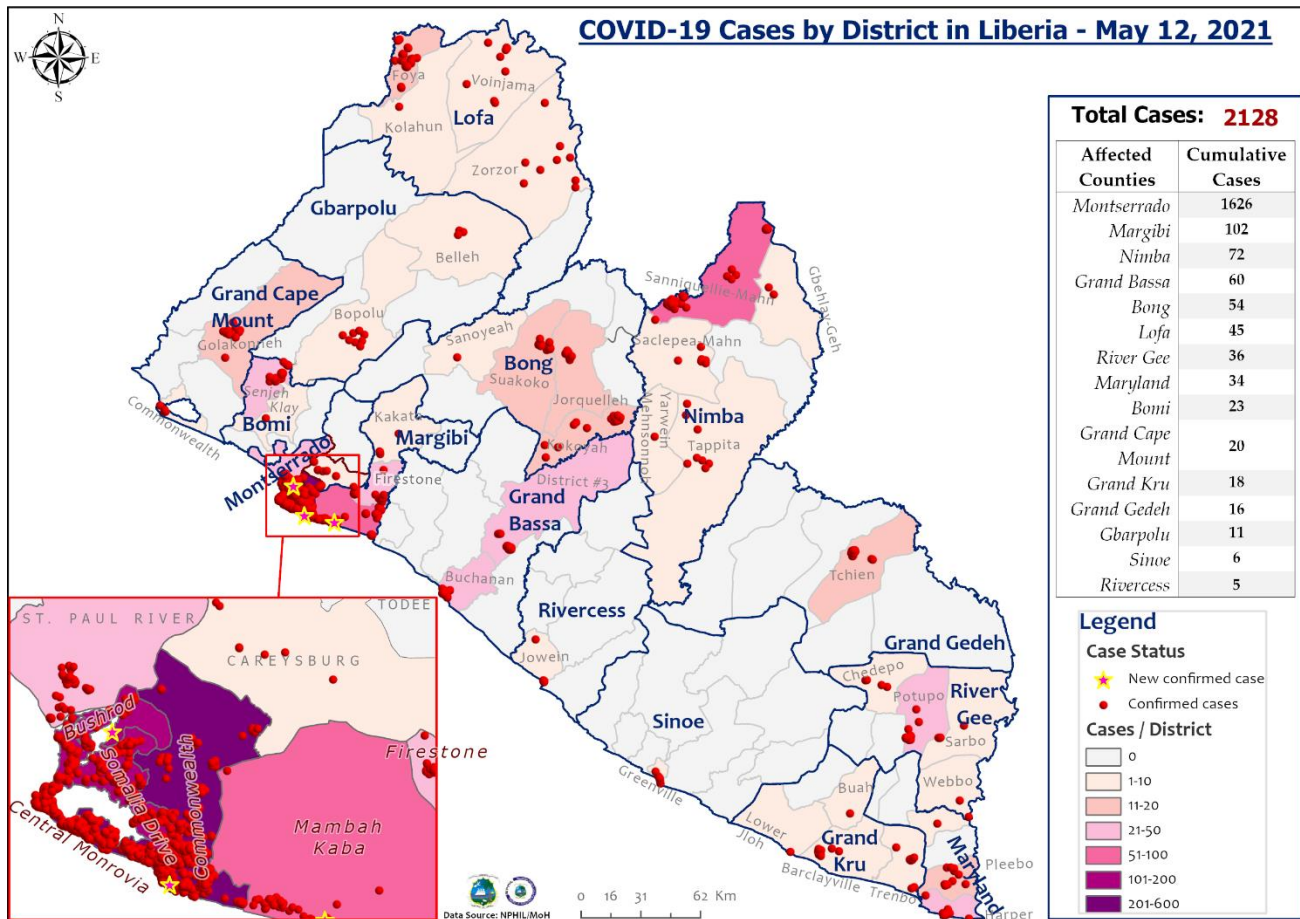


Figure 1

1.4 Clinical Features

Current estimates of the incubation period range from 2 to 14 days, with an estimated median of 5.2 days (Lauer et al., 2020). The clinical presentation greatly resembles viral pneumonia, and severity ranges from mild to severe. The majority of patients present with mild illness. Approximately 20% of cases progress to severe disease requiring hospitalization. Severe illness may be more likely in older people or those with underlying health conditions.

The most common symptoms are fever, cough, and shortness of breath. Other less common symptoms include myalgia, fatigue, sputum production, confusion, headache, sore throat, runny nose, chest pain, , diarrhoea, and nausea/vomiting. Approximately 90% of patients present with more than one symptom, and 15% of patients present with fever, cough, and dyspnoea. Clinical presentations resemble SARS, but it appears that fewer patients have upper respiratory or gastrointestinal symptoms. Infected persons may be asymptomatic (Jiang et al., 2020).

Approximately 33% of patients have complications such as acute respiratory distress syndrome, acute respiratory injury, septic shock, and acute renal injury(Baud et al., 2020) (Jiang et al., 2020). Acute cardiac injury and secondary infections have also been reported. Unilateral lung infiltrates are found in 25% of patients, with bilateral lung infiltrates found in 75% of patients on chest x-ray or computed tomography(Baud et al., 2020) (Xu et al., 2020).

2.0 INTEGRATED DISEASE SURVEILLANCE AND RESPONSE & COVID-19

Liberia adapted the IDSR in 2004 as a platform for implementation of International Health Regulation (IHR (2005). This strategy has evolved in Liberia from the first edition, 2004; second edition, 2016; and the current third edition, 2019 due to changes in disease conditions as well as the environment considering the One Health Approach (CDC, 2016; Shoman et al., 2017; Nagbe et al., 2019).

In November, 2020, the Corona Virus Disease (COVID-19) was integrated into IDSR Technical Guidelines as disease of priority for surveillance in Liberia (NPHIL, 2020).

2.1 Surveillance Goal

The goal of COVID-19 surveillance is to enable public health authorities to reduce transmission of COVID-19, thereby limiting associated morbidity and mortality.

All levels of the Liberian health system (Point of entry, community, health facility, district, county, and national) are involved in conducting surveillance activities for detecting and responding to priority diseases and conditions.

3. 0 DETECTION OF COVID-19 CASES USING CASE DEFINITIONS

Early recognition and rapid diagnosis are essential to prevent transmission and to provide management in a timely manner and to break the chain of transmission. Cases of COVID-19, like all other priority diseases are identified using the case definition..

3.1 Case definitions

Case definitions:

<p>Simplified/Community Case Definition</p> <p>Any person with hot skin, cough, not breathing well, and/or who has travelled from outbreak area OR who has taken care of sick person;</p> <p>Suspected case:</p> <p>Any person with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath), AND a history of travel to or residence in country or location reporting community transmission of COVID-19 disease during 14 days prior to symptom onset;</p> <p style="text-align: center;">OR</p> <p>A person with any acute respiratory illness AND having been in contact with a confirmed or probable COVID-19 case (see definition of contact) in the last 14 days prior to symptom onset; OR</p> <p>A person with severe acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath; AND requiring hospitalization) AND in the absence of an alternative diagnosis that fully explains the clinical presentation;</p>
<p>Standard Case Definition</p> <p>Probable case:</p> <p>A suspect case for whom testing for the COVID-19 virus is inconclusive;</p> <p style="text-align: center;">OR</p> <p>A suspect case for whom testing could not be performed for any reason</p>
<p>Confirmed case:</p> <p>A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms</p>
<p>Further <u>confirmed</u> case definitions:</p>
<p>A: Index case: The case first detected, which alerts health authorities to the existence of an outbreak.</p> <p>B: Primary case: A primary case is an individual who tests positive for COVID-19 and has the earliest onset date in a particular setting e.g. household, school, hospital etc.</p> <p>C: Secondary case: A secondary case is a contact who becomes a case.</p> <p>D: Imported case: An imported case is a case with a history of travel from an affected area in the 14 days before</p> <p>*(subject to future alteration as data becomes available)</p>

3.2 Thresholds

Alert threshold

Respond to a suspected case of COVID-19 or any new strain of the disease or an unusual event of severe acute respiratory infection:

- Report case-based information immediately to the appropriate levels.
- Implement acute respiratory disease infection control precautions immediately and enhance Standard Precautions throughout the health care setting.
- Treat and manage the suspect case according to national guidelines
- Collect laboratory specimens from case-patient and from symptomatic contacts and arrange for laboratory testing.
- Review clinical & exposure history up to 14 days prior to symptom onset
- Identify and follow-up close contacts of case-patient
- Search for additional cases

Epidemic threshold

One laboratory-confirmed case of COVID-19 is an **OUTBREAK**

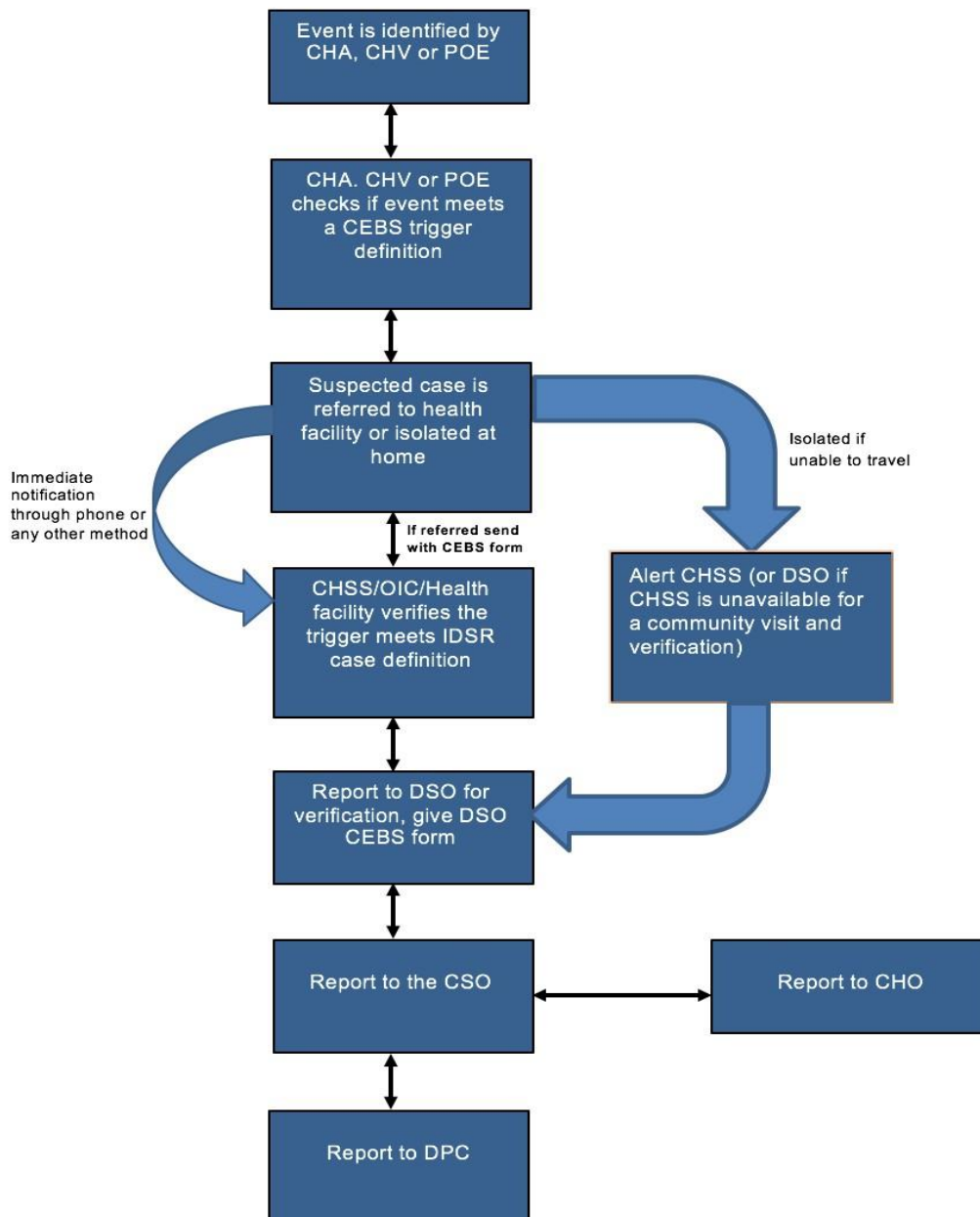
Reporting structure and Mechanism

The routine flow of surveillance data is usually from each reporting site to its immediate supervisor (usually the higher level within the health system) as follows:

- Community Health Assistants, Community Health Volunteers, Port Health Officers, Community Animal Health Workers, and Environmental Health Officers report to the Surveillance Focal Point at the Health Care Facility
- The Surveillance Focal Point (SFP) at health facilities report to the District Surveillance Officer (DSO)
- The DSO provides district level data to the County Surveillance Officer (CSO) or other identified member of the County Health Team (CHT)

The CSO/CHT provides County level data to the national Public health Institute of Liberia (NPHIL), Division of Infectious Disease and Epidemiology (DIDE)

DIDE/NPHIL then collates and analyzes all data to show what is happening with morbidity and mortality in Liberia for the reporting period (weekly, monthly, quarterly or annually) and provides evidence for planning and response activities. Feedback should be provided to all sites that report data, or should report data, for their own information and planning purposes. In addition, the CHT should also provide analysis of the situation within the county to the districts and HCFs.



3.3 Case Investigation for Contact Identification and Listing

Case investigation is done to identify the source of infection and contacts. Every effort should be made to include all contacts, including infants and children of the case to generate the specimen and data sampling time frame for follow-up.

Identification of the contacts is done through interrogating the activities of the case or the activities and roles of the people around the case since onset of symptoms. Contacts can include household members, other family contacts, visitors, neighbours, colleagues, teachers, classmates, co-workers, social or health workers, and members of a social group.

Information can be obtained from the case and as well as people around the case. If the case has died, contact tracing team should visit home/health facility of the deceased to carry out contact investigation.

A suspected or confirmed **case-based form** (Annex 4) should be filled out and all contacts of symptomatic suspected, probable and confirmed cases should be systemically identified and listed in the **contact listing form** (Annex 5).

1.5 Laboratory Diagnosis

Diagnostic test

Molecular testing with real-time reverse-transcriptase polymerase chain reaction (**RT-PCR**) is required to confirm the diagnosis

Specimen to be collected

Oral and Nasal Pharyngeal swaps are required for all suspected COVID-19 cases.

When to collect

Obtain specimen when suspected

- Initial specimens (respiratory or blood) should ideally be collected from suspected patients before therapy is begun but treatment must not be delayed in order to take specimens.

How to prepare, store, and transport

Respiratory specimens should be transported in virus transport media. Media that could be used for a variety of viruses are commercially available.

- Specimens in viral transport medium for viral isolation should be kept at 4°C and transported to the laboratory promptly. If specimen is transported within 2 days, it may be kept at 4°C; otherwise should be frozen at or below -70 °C until transported to the laboratory. Repeated freezing and thawing must be avoided to prevent loss of infectivity.
- Sera may be stored at 4°C for approximately one week, but thereafter should be frozen at -20°C.
- Transport of specimens should comply with the WHO guidelines for the safe transport of infectious substances and diagnostic specimens.

3.4 Contact Tracing

Definition of contact

“A **contact** is a person who experienced any one of the following exposures during the 2 days before and the 14 days after the onset of symptoms of a probable or confirmed case”:

- Face-to-face contact with a probable or confirmed case within 6 feet and for more than 15 minutes;
- Direct physical contact with a probable or confirmed case;
- Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment; Or other situations as indicated by local risk assessments;

Contact tracing should commence immediately at the following instances;

- when a case of COVID-19 has been confirmed OR
- when a contact who is being monitored becomes symptomatic within 14 days of last contact with a confirmed case, even while confirmation is awaited

Effective contact tracing entails the following;

- Thorough case investigation which provides information for contact identification and listing
- Contact classification
- Contact follow-up or monitoring

3.5 Contact Classification

Each contact should be assigned a category using the criteria as described in Table 2 below.

It is important to correctly classify every contact so that the right follow-up actions are taken.

Once a contact is classified as a high risk, all efforts should be made to physically follow up and quarantine that contact **within 24 hours** of identification and listing. High risk contacts are categorized as “close contact”. Close contacts may be further categorized as “social or health care worker contact” or “household or closed setting contact”.

HIGH RISK CONTACTS (Require institutional quarantine)
Close contact “Any person who had contact with a probable or confirmed case within 6 feet and for more than 15 minutes;”
Further Close Contact Classification
Social and health care workers contact “Any social or health care worker, who provided direct personal or clinical care, or examination of a symptomatic confirmed case of COVID-19 or within the same indoor space, when an aerosol generating procedure was implemented without appropriate PPE (Please use IPC classification of high risk for healthcare workers)
Household (or closed setting) contact: Any person who has resided in the same household (or other closed setting) with a confirmed COVID-19 case

LOW RISK CONTACTS (self-quarantine)
Any person who is a contact of a contact
Any person who shares a open area for less than 15mins beyond 6ft (2metres) of the confirmed COVID-19 case and the case is wearing a mask
Any person who is wearing a mask and is sharing a confined space with a masked confirmed case

3.6 Contact Monitoring

All contacts should be monitored for 7 days from the last day of contact with a confirmed COVID-19 case and tested on day 7. Those who test negative will be released. Those testing positive will be transferred to the treatment unit. Those who refuse testing will be monitored for an additional 7 days. . The contact monitoring team should be responsible for informing the contacts of their status.

Team composition: Surveillance Officer/ Contact Tracer, Psychosocial, and Case Management

High risk Contact Monitoring:

High risk contacts should be monitored twice daily physically. Findings should be recorded on the Contact Monitoring Form (Annex 6)

During the monitoring of a high-risk contact, the contact monitoring officer should

- Wear a facial mask correctly for each visit
- Stand at least 6 ft (2meters) away from the contact in an open space (avoid enclosed environment)
- Ask about any symptoms (fever, cough, difficult breathing, any other)
 - if there are any reported symptoms document and liaise with the supervisor to **inform case management for immediate evacuation to isolation center**
 - If there are no reported symptoms take and record the contact's temperature (Use a thermo scan) standing on the side of the contact with the contact looking away from the contact monitor.

Low risk contact monitoring

Low risk contacts can be reached physically once daily. Findings should be recorded on the Contact Monitoring Form (Annex 6)

- Ask about any symptoms (fever, cough, difficult breathing, any other)
 - if there are any reported symptoms document and liaise with the supervisor to **inform case management for immediate evacuation to isolation center**
 - If there are no reported symptoms take and record the contact's temperature (Use a thermo scan) standing on the side of the contact with the contact looking away from the contact monitor.
- Advise contacts to:
 - Avoid social gatherings and close physical contact
 - Avoid travel
 - Remain reachable for monitoring

- **NOTE:** If a Contact ‘A’ becomes a confirmed case, those who were previously classified as “low-risk” on account of being a contact of Contact ‘A’ should be immediately reclassified.

3.7 Point of Entry Screening and Referral

Screening (Entry/Exit Screening) should be conducted aiming at utilizing public health measures to detect ill travelers and their contacts on arrival and before departing Liberia to determine the presence of active illness or recent exposure.

- **Primary Screening** – Measures designed to detect ill travelers and their contacts such as visual observation of travelers for overt signs or symptoms of illness, measurement of body temperature using non-contact thermometers and dissemination and collection of a completed Health Locator Form (HLF).
- **Secondary Screening** – The process of further public health assessment of the traveler based on recognition of symptoms of COVID-19 and other infectious diseases during the primary screening process. Measures include the review of the Health Declaration Form and interview of the traveler using a secondary screening form that considers additional information. Based on the outcome of public health interview, a traveler could be either allowed to proceed or deemed a risk to public Health and not allowed to continue travel.

General Screening Procedures at the Points of Entry

- All travelers crossing the border should form a queue (with two meters/6 feet apart) at the handwashing station
- Wash your hands
- Travelers’ temperature is taken
- If temp is normal (35-36.5), proceed to the desk to fill in the immigration landing form
- All travelers should remain in queue (with two meters or 6 ft. apart) that stops at the border point
- Present all your travel documents (passport, boarding passes, ticket and yellow book)
Any traveler with temperature less than $<38^{\circ}\text{C}$, he/she will be requested to proceed to the immigration booth for immigration process
- Any traveler that meets the case definition, will have specimen collected before being transported to the Isolation Center
- For travelers that will require secondary screening, will be escorted, along with his/her luggage, to the designated HF
- Absolutely, no family or relative of the traveler will be allowed to take any of the travelers’ belongings while enroute to the Isolation Center

3.8 Active case finding and reporting

Community Level

Active case finding and reporting from the community should be on-going until the NPHIL declares otherwise.

Community Health Workers and community members can use the community case definition to identify a suspected case (a trigger). If the person meets the community case definition, the following steps should be taken:

- Encourage self-reporting by calling 4455 or the county hotline or inform the community informant (CHA/gCHVs)
- Community alerts should be verified by proximal health facility
- Health facility will follow the process flow-chart as outlined

Health Facilities

All health facility staff should be trained to know the case definition and have a high index of suspicion for COVID-19. Effective triaging should be done at all health facilities to ensure that possible COVID-19 cases are quickly identified and isolated from other hospital staff and attendants. Each health facility must prepare an isolation room or space.

If the person who reports at a health facility meets the case definition, the following steps should be taken:

- Isolate the suspected case
- Provide the suspected case with face mask
- Health facility will follow the process flow-chart as outlined

Rumor Management

Any rumor of a suspected COVID-19 case or contact reported through 4455 or through any other means must be investigated by a health worker.

Whoever receives the rumor must report it to 4455 or to the head of surveillance at that level for further instructions.

4.0 REPORT SUSPECTED CASES, CONDITIONS OR EVENTS TO THE NEXT LEVEL THROUGH THE SURVEILLANCE REPORTING STRUCTURE

- A suspected case of COVID-19 may be identified at various levels of the health system; points of entry, community, healthcare facility, district, county, and national.
- Reporting to the next level must be done immediately once a COVID-19 case is suspected via phone call and followed by a form of documentation, preferably e-mail.
- A case investigation form should be filled and the case added to the line list of suspected or confirmed COVID-19 cases

The overarching process flow for reporting of suspected COVID-19 cases is described

It indicates actions to be taken by surveillance officers at the various levels.

The purpose of reporting cases is for information sharing for appropriate follow-up actions which may include the following;

- Laboratory testing for confirmation or otherwise (Surveillance pillar links with laboratory pillar)
 - Only the IMS Chair or Epi Surveillance pillar lead can authorize a request for laboratory confirmation at the National Public Health Reference Laboratory (NPHRL)
 - When a sample is taken for laboratory confirmation, NPHRL Lab pillar lead will release the result through the IMS Chair or the Epi Surveillance pillar lead to the county that reported the case.
- Case management of confirmed cases (surveillance pillar links with case management pillar)
- Contact tracing (carried out by surveillance pillar) – described above under Step 1: “case Detection”

5.0 ANALYSE AND INTERPRET DATA

Data must be carefully gathered, analysed and interpreted to guide appropriate response actions.

Each jurisdiction (point of entry, community, health facility, district, county, national) must have the following information summarized by reporting units and displayed as appropriate (use acronyms to shield individual case identity when displaying data. These include

- Total number of suspected cases, new cases by day/by week
- Total number of confirmed cases by sex, age, community, new confirmed by day/week
- Total number of cases in isolation
- Total number of cases discharged
- Number of secondary cases per confirmed case
- Number of contacts per case, number under follow up, number seen by day, number that have completed 14 days follow-up
- Attack rate
- Mortality rate
- Recovery rate
- Trend graph of the outbreak, showing intervention points
- Map showing distribution of cases by location

6.0 INVESTIGATE SUSPECTED COVID-19 CASES

The results of the investigation of a suspected COVID-19 case or related event leads to the identification and assessment of people who have been exposed to the infectious disease or affected by an unusual health event. The investigation team gathers relevant information for taking immediate action to prevent further morbidity and mortality and for improving long-term disease prevention activities.

The investigation of a suspected outbreak characterizes the outbreak and provides evidence for the appropriate response. Investigating the factors associated with a health event is an ongoing process that continues during the response to refine and evaluate the public health activities.

The following are steps in investigating a suspected outbreak of COVID-19.

- Prepare for field work
- Establish the existence of an outbreak
- Verify the diagnosis
- Construct a working case definition
- Find cases systematically and record information
- Perform descriptive epidemiology
- Develop hypotheses
- Evaluate hypotheses epidemiologically
- As necessary, reconsider, refine, and re-evaluate hypotheses
- Compare and reconcile with laboratory and/or environmental studies
- Implement control and prevention measures
- Initiate or maintain surveillance
- Communicate findings

8.0 RESPOND TO COVID-19 OUTBREAKS

The results of the investigation should guide the response. Successful responses are carried out with community involvement and often include a community education and behavior change component. The Rapid Response Teams (RRTs) at national or sub national levels will be needed to implement these responses.

When responding to COVID-19 outbreak the steps include the following:

- declaring an outbreak and convening incident management system,
- mobilizing response teams for immediate action,
- implementing response activities,
- outbreak reporting, and
- documenting the response.

When an alert threshold is reached at county level, the national level should be notified. At this preliminary stage (still at alert threshold) the national level response may be minimum; verification, monitoring and when necessary providing county support including resource mobilization. The IMS will be in a state of alertness; prepared to be activated at any given time if required.

When a COVID-19 outbreak is declared, the established County or National RRTs are switched into response mode and the IMS is activated.

9.0. PROVIDE FEEDBACK TO ALL LEVELS

Feedback should be provided to all levels through rapid and complete communication about the investigation outcome and success of response efforts that encourages future cooperation.

- Epi surveillance pillar members at all levels should endeavor to communicate with the pillar lead who communicates with other pillar leads or designates.
- Pillar members should refrain from creating confusing communication channels across pillars
- Pillar leads at all levels should provide prompt feedback to members
- Daily pillar meetings at each level handling at least a confirmed case is encouraged (National, County, District, Facility).
- Communication must be evidence-based

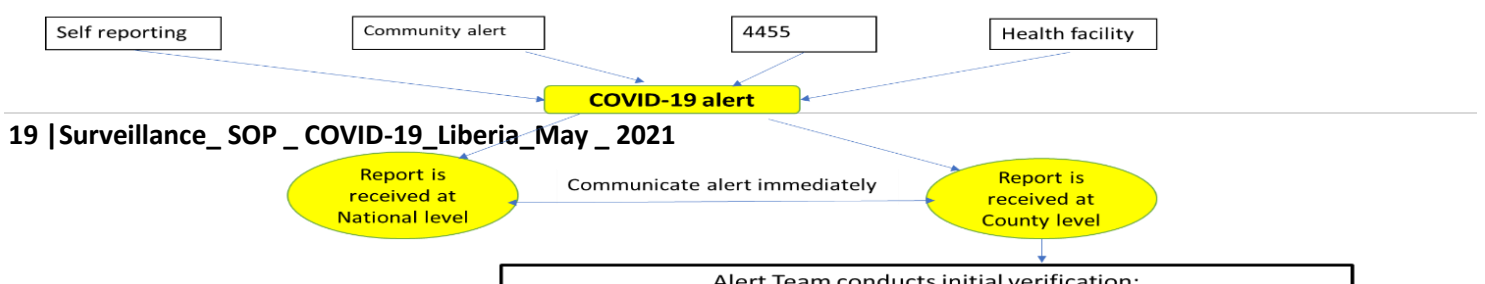
10.0 EVALUATE THE SYSTEM

The effectiveness of the surveillance and response systems should be assessed so action can be taken to improve the system. NPHIL DIDE will lead the process of providing national indicators and targets periodically to follow the outcome of surveillance and response activities. Surveillance teams at various levels should work towards these targets as appropriate. These indicators should include;

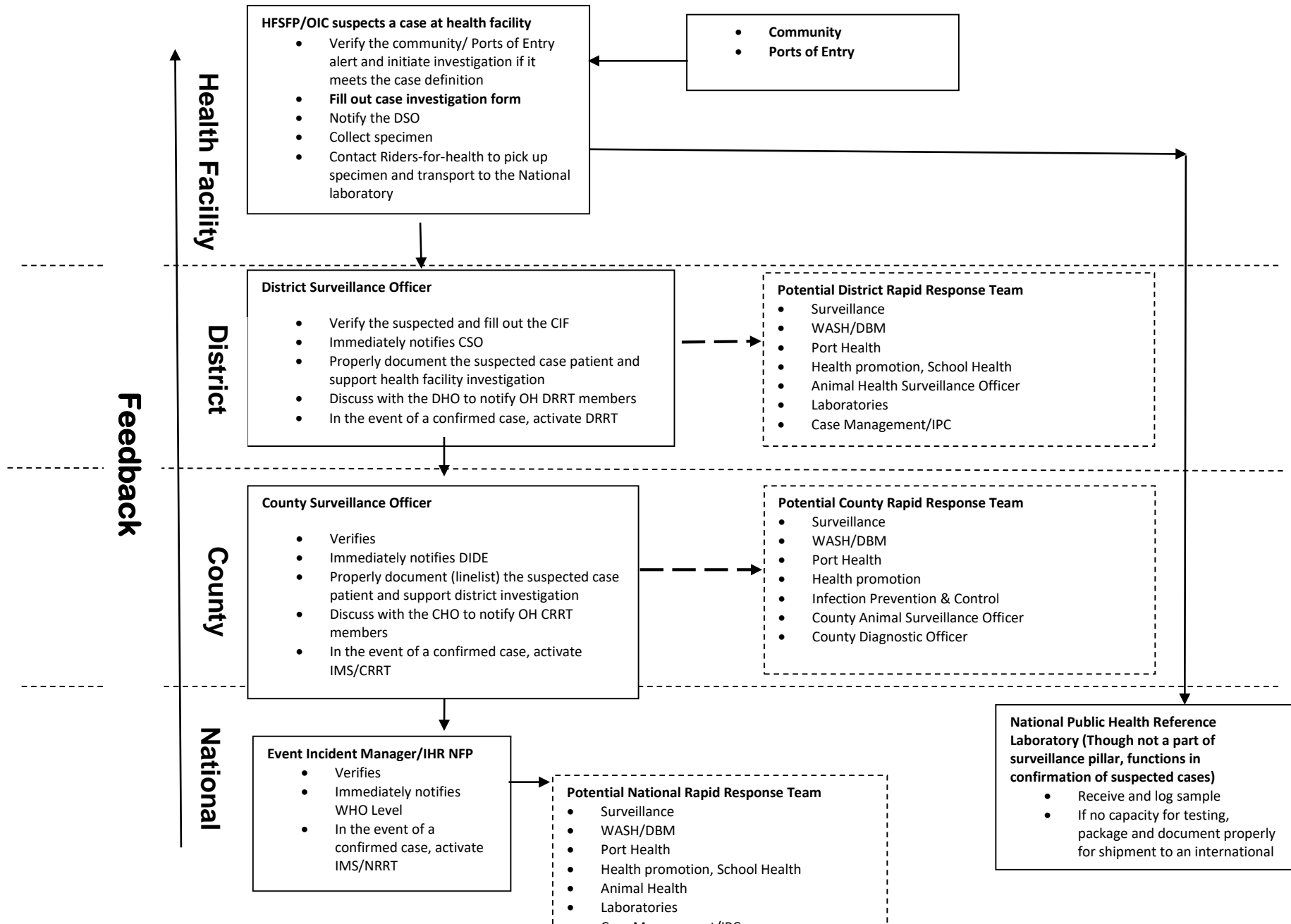
- Timeliness and completeness of reporting
- Proportion of cases investigated and responded to within 24 – 48 hours
- Proportion of contacts identified, line listed and followed up
- Proportion of high-risk contacts tested within 24 hours
- Proportion of samples meeting Laboratory turnaround time for COVID-19 testing
- Proportion of high-risk contacts lost to follow-up
- Proportion of counties/districts with local transmission

ANNEXES

Annex 1: Flow chart for responding to COVID-19 alerts, Epi-surveillance COVID-19 response, Liberia, April 2, 2020



Annex 2: Process flow for the detection and reporting of a suspected COVID-19 case



Annex 3: POE alert Trigger Notification Form

Section A

POE Information

PoE _____ District _____ County _____
 Name of Reporter _____ Position _____ Phone Number(s) _____
 Time and Date of Report _____ (HH) _____ (MM) _____ / DD _____ / MM _____ / YYYY

Traveller Information

Name _____ Age _____ Gender M F
 Head of household's name _____
 Address/Village name _____
 Phone Number(s) _____
 Passport/ National ID No. _____
 Emergency Contact (name, phone number) _____
 Country of Departure and Transit Country/ies (if applicable) _____

Traveller's Companion

Name	Age	Relationship	Address In Liberia

Notification triggers for passengers* at POE identified in this traveller (tick as appropriate)

To be completed by the point of entry health screener	
<input type="checkbox"/>	Person with weakness in the legs and arms or not able to walk.
<input type="checkbox"/>	Running stomach - any person passing three (3) or more water pu-pu within one day.
<input type="checkbox"/>	Diarrhea with blood (pu-pu with blood) - any person passing bloody pu-pu or slimy (slippery) pu-pu with stomach pain
<input type="checkbox"/>	Person with hot skin (fever) and spot-spot (rash)
<input type="checkbox"/>	Any person who has fever and two or more other symptoms (headaches; vomiting; runny stomach; weak in the body, yellow eyes), or who died after serious sickness with fever and bleeding.
<input type="checkbox"/>	Any person with hot skin (fever) and stiff neck.

Was the traveller referred to the nearest healthcare facility (HCF) or a healthcare worker (HCW) attended him/her?

Yes if yes, write the name of the HCF/HCW _____

No if the traveller did not go to the HCF and there is no HCW to examine him/her, mention the reason

Section B - To be completed by the HCW/HCF OIC

Meets case definition? Yes No If Yes, assign number _____

Summary of Actions Taken:

- Traveller examined for verification of symptoms
- Traveller admitted to HCF or attended by HCW
- Specimen collected for lab investigation
- District/County notified
- Referral to higher level of care

Travelers Screened on Arrival

Epi Week	Travelers Screened		Sex		Total	No. with health risk	Travelers vaccinated		Vaccine accountability		Yellow Book		Human Remains Examined	Quantity of Food Certified	Conveyance Inspection			List of Nationality	Comment
	Liberian	Allien	Male	Female			Liberian	Allien	Received	Used	YB Demage/Ca rd Replaced	YB.Issued			# of Convey.	Convey's Name	Date of arrival		

Travelers Screened on Departure

Epi week	Travelers Screened		Sex			No. with health risk	Travelers vaccinated		Vaccine accountability			Yellow Book	Human Remains Examined	Quantity of Food Certified	Conveyance Inspection			Comment/List of Nationality	Comment
	Liberian	Allien	Male	Female	Total		Received	Used	YB Damage/CARD	YB.Issued	# of Convey.	Convey's Name			Date of arrival				

Annex 4: Case investigation form

Form A0: Minimum data reporting form – for suspected and probable cases

Unique Case ID / Cluster Number (if applicable):

1. Current Status

Alive Dead

2. Data Collector Information

Name of data collector	
------------------------	--

Data collector Institution	
Data collector telephone number	
Email	
Form completion date (dd/mm/yyyy)	___/___/___
3a. Case Identifier Information	
Given name(s)	
Family name	
Sex	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known
Date of Birth	___/___/___
(dd/mm/yyyy)	<input type="checkbox"/> Unknown
Telephone (mobile) number	
Age (years, months)	___ years ___ months
	<input type="checkbox"/> Unknown
Email	
Address	
National social number/ identifier (if applicable)	
Country of residence	
Case status	<input type="checkbox"/> Suspected <input type="checkbox"/> Probable <input type="checkbox"/> Confirmed
3b. Interview respondent information (if the persons providing the information is not the patient)	
First name	
Surname	
Sex	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known
Date of Birth (dd/mm/yyyy)	___/___/___
Relationship to patient	
Respondent address	
Telephone (mobile) number	

4. Patient symptoms (from disease onset)	
Date of first symptom onset (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> No symptoms <input type="checkbox"/> Unknown
Fever (≥ 38 °C) or history of fever	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Sore throat	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Runny nose	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Cough	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Shortness of Breath	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
5. Initial respiratory sample collection	
Date respiratory sample collected (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> NA
What type of respiratory sample was collected?	<input type="checkbox"/> Nasal swab <input type="checkbox"/> Throat swab <input type="checkbox"/> Nasopharyngeal swab <input type="checkbox"/> Other, specify: _____
Has baseline serum been taken?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date baseline serum taken (dd/mm/yyyy)
Were other samples collected?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, which samples: _____ If yes, date baseline serum taken (dd/mm/yyyy)
6. Clinical Course: Complications	
Hospitalization required?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, name of hospital: _____
ICU (Intensive Care Unit) admission required	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Acute Respiratory Distress Syndrome (ARDS)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Pneumonia by chest X-ray	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable (no X-ray performed) <input type="checkbox"/> Date: ___/___/___
Other severe or life-threatening illness suggesting of an infective process	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: _____
Mechanical ventilation required	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Extracorporeal membrane oxygenation (EMO)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
7. Human exposures in the 14 days before illness onset	
Have you travelled within the last 14 days domestically?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___
Have you travelled within the last 14 days internationally?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___

	Cities visited:
In the past 14 days, have you had contact with anyone with suspected or confirmed 2019-nCoV infection?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of last contact (DD/MM/YYYY):
Patient attended festival or mass gathering	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:
Patient exposed to person with similar illness	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Location of exposure	<input type="checkbox"/> Home <input type="checkbox"/> Hospital <input type="checkbox"/> Workplace <input type="checkbox"/> Tour group <input type="checkbox"/> Unknown
Patient visited or was admitted to inpatient health facility	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:
Patient visited outpatient treatment facility	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:
Patient visited traditional healer	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify type:
Patient occupation (specify location/facility)	<input type="checkbox"/> Health care worker <input type="checkbox"/> Working with animals <input type="checkbox"/> Health laboratory worker <input type="checkbox"/> Student <input type="checkbox"/> Other, specify:

8. Status of form completion

Form completed	<input type="checkbox"/> Yes <input type="checkbox"/> No or partially If no or partially, reason : <input type="checkbox"/> Missed <input type="checkbox"/> Not attempted <input type="checkbox"/> Not performed <input type="checkbox"/> Refusal <input type="checkbox"/> Other, specific:

The First Few X (FFX): Cases and contact investigation protocol for 2019-novel coronavirus

Form A1: Case initial report form – for confirmed cases (Day

1)

COMMENT: Information in this form may already have been completed in the Case Minimum Data Reporting Form (Form A0). It is therefore not necessary to repeat any data in these sections that has already been completed.

Unique Case ID / Cluster Number (if applicable):

--

1. Current Status
<input type="checkbox"/> Alive <input type="checkbox"/> Dead
2. Further case classification
<input type="checkbox"/> Primary <input type="checkbox"/> Secondary <input type="checkbox"/> Imported

3. Data Collector Information	
Name of data collector	
Data collector Institution	
Data collector telephone number	
Email	
Form completion date (dd/mm/yyyy)	___/___/___

4. Interview respondent information (if the persons providing the information is not the patient)	
First name	
Surname	
Sex	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known
Date of Birth (dd/mm/yyyy)	___/___/___
Relationship to patient	
Respondent address	
Telephone (mobile) number	

5. Patient Identifier Information	
First name	
Surname	
Sex	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known
Date of Birth (dd/mm/yyyy)	___/___/___
Telephone (mobile) number	
Age (years, months)	
Email	

Address	
National social number/ identifier (if applicable)	
Country of residence	
Nationality	
Ethnicity (optional)	

Form A1: Case initial report form – for confirmed cases (Day 1)

Responsible Health Centre	
Nursery/School/College if appropriate	

6. Health care center/ treating physicians details	
Name	
Practice name	
Is this case part of an institutional outbreak?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:
Telephone number	
Fax	
Address	

7a. Patient symptoms from onset of symptoms	
Date of first symptom onset (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> Asymptomatic <input type="checkbox"/> Unknown
Fever (≥ 38 °C) or history of fever	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify maximum temperature:
Date of first health facility visit (including traditional care) (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> NA <input type="checkbox"/> Unknown
Total health facilities visited to date	<input type="checkbox"/> NA <input type="checkbox"/> Unknown Specify:
7b. Respiratory symptoms	
Sore throat	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, date (dd/mm/yyyy): ___/___/___
Cough	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, date (dd/mm/yyyy): ___/___/___
Runny nose	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Shortness of breath	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, date (dd/mm/yyyy): ___/___/___

7c. Other symptoms	
Chills	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Vomiting	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Nausea	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Diarrhea	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Headache	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Rash	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Conjunctivitis	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Muscle aches	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Joint ache	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Loss of appetite	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Nose bleed	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Fatigue	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Seizures	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Altered consciousness	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Neurological signs	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

Form A1: Case initial report form – for confirmed cases (Day 1)

If Yes, specify	
Other symptoms	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:

8. Patient symptoms: Complications	
Hospitalization	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Date of first hospitalization	___/___/___ <input type="checkbox"/> Unknown
ICU (Intensive Care Unit) Admission	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Date of ICU admission (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> Unknown
Date of discharge from ICU (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA
Mechanical ventilation	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Dates of mechanical ventilation (dd/mm/yyyy)	Start: ___/___/___ Stop: ___/___/___
Length of ventilation (days)	
Acute Respiratory Distress Syndrome (ARDS)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___ / ___ / ___
Acute renal failure	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___ / ___ / ___
Cardiac failure	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___ / ___ / ___
Consumptive coagulopathy	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___ / ___ / ___
Pneumonia by chest X-ray	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___ / ___ / ___
Other symptoms	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:
Extracorporeal membrane oxygenation (EMO) required	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Hypotension requiring vasopressors	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Date of discharge from hospital (if applicable) (dd/mm/yyyy)	___/___/___
Outcome	<input type="checkbox"/> Alive <input type="checkbox"/> Died <input type="checkbox"/> NA <input type="checkbox"/> Unknown
Outcome current as of date (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA

9. Patient pre-existing condition(s)	
Obesity	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Cancer	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Diabetes	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
HIV/other immune deficiency	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Heart disease	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Asthma (requiring medication)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Chronic lung disease (non-asthma)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Chronic liver disease	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

Chronic haematological disorder	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Pregnancy	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify trimester: <input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> NA
Chronic kidney disease	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Chronic neurological impairment/disease	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Organ or bone marrow recipient	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Other pre-existing condition(s)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:

10. Health care interactions

Contact with emergency number	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Date of emergency contact (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> Unknown
Visit to primary health care PHC (GP, etc) (repeat for as many visits as required)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Date of first PHC contact (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA
Visited Emergency Department (A&E) (repeat for as many visits as required)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Date of first A&E contact (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA
Hospitalisation (repeat for as many admissions as required)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Skip rest of form 11 if no
Date of first admission to hospital (dd/mm/yyyy)	___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA
Name and place of first hospital	

11. Human exposures in the 14 days before illness onset

Have you travelled within the last 14 days domestically?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___
Have you travelled within the last 14 days internationally?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___
In the past 14 days, have you had contact with a anyone with suspected or confirmed 2019-nCoV infection?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of last contact (DD/MM/YYYY): ___/___/___

Patient attended festival or mass gathering	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:
Patient exposed to person with similar illness	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Location of exposure	<input type="checkbox"/> Home <input type="checkbox"/> Hospital <input type="checkbox"/> Workplace <input type="checkbox"/> Tour group <input type="checkbox"/> School <input type="checkbox"/> Unknown
Patient visited or was admitted to inpatient health facility	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:
Patient visited outpatient treatment facility	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify:
Patient visited traditional healer	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify type:
Patient occupation (specify location/facility)	<input type="checkbox"/> Health care worker <input type="checkbox"/> Working with animals <input type="checkbox"/> Health laboratory worker <input type="checkbox"/> Student <input type="checkbox"/> Other, specify:

					DD/MM/Y YYY					
--	--	--	--	--	----------------	--	--	--	--	--

*Close contact is defined as: healthcare-associated exposure, including providing direct care for nCoV patients, working with healthcare workers infected with nCoV, visiting patients or staying in the same close environment of a nCoV patient. This could also be defined as a healthcare worker working together in close proximity, sharing the same classroom environment with a nCoV patient, traveling together with nCoV patient in any kind of conveyance or living in the same household as a nCoV patient. **Healthcare worker

ANNEX 6: COVID -19 DAILY CONTACT MONITORING TOOL

Liberia COVID-19 Contact Tracing Form

Note: Complete this contact tracing form for every contact of a CONFIRMED CASE under investigation. Close contact is defined as: healthcare-associated exposure, including providing direct care for COVID-19 case, working with healthcare workers infected with COVID-19, visiting or staying in the same close environment of a COVID-19 case. This could also be defined as a healthcare worker working together in close proximity, sharing the same room environment with a COVID-19 case, traveling together with COVID-19 case in any kind of conveyance or living in the same household.

***Mandatory Field**

GPS Point

Latitude Longitude Accuracy

County Name*

Bomi Grand Cape Mount Margibi River Gee
 Bong Grand Gedeh Maryland Rivercess
 Gbarpolu Grand Kru Montserrado Sinoe
 Grand Bassa Lofa Nimba

Monitoring Health District*

Health Zone*

Tracer ID Number Contact Investigation Number Confirmed Case ID to the contact*

Personal Information

Last Name

First Name

Middle Name

Do you have any identification card?
 Yes No ID Number

Contact Gender?*
 Male Female If others, specify

If yes, which type of ID?
 Driver License
 Passport
 National ID
 Voter Card
 Others

Contact Date of Birth*

Do you reside in the same house with the case?
 Yes No

Contact Relation to the Case*

Brother Sister Cousin Close friend
 Uncle Aunt Staff Others

If others, please specify []

What is the risk status of the contact?*
 High Risk Low Risk

How long have you been together before the case felt sick?*
 One day Two days Three days Four days
 Five days

Date of last contact with the case*

Place of last contact with the case*

Office Restaurant Mosque
 Market Church Others

How close where you to the case during your interaction?*

Shoke hands Slept in the same room
 Ate together Traveled in the same vehicle
 Traveled in the same plane None of the above

If others, please specify

Since your last contact with the confirmed case, have you spent time in another place?*
 Yes No Primary number:

Are you a healthcare worker?*
 Yes No **Contact in POC?***
 Yes No

Name of the POC*

Do you have any domestic animal living with you?*
 Yes No If yes, type of animal? Alternative number:

REFERENCES

- Abebe, E. C., Dejenie, T. A., Shiferaw, M. Y., & Malik, T. (2020). The newly emerged COVID-19 disease: A systemic review. *Virology Journal*, *17*(1), 1–8. <https://doi.org/10.1186/s12985-020-01363-5>
- Africa, W. H. O. R. O. for. (2019). *Integrated Disease Surveillance and Response (IDSR) Technical Guidelines, WHO African Region, 3rd Edition; Section one*.
- Ahmad, T., Dhama, K., Sharun, K., & Khan, F. M. (2020). *Biosafety and biosecurity approaches to restrain / contain and counter SARS-CoV-2 / COVID-19 pandemic : a rapid-review*. 132–145. <https://doi.org/10.3906/biy-2005-63>
- Baud, D., Qi, X., Nielsen-Saines, K., Musso, D., Pomar, L., & Favre, G. (2020). Real estimates of mortality following COVID-19 infection. *The Lancet Infectious Diseases*, *3099*(20), 30195. [https://doi.org/https://doi.org/10.1016/S1473-3099\(20\)30195-X](https://doi.org/https://doi.org/10.1016/S1473-3099(20)30195-X)
- CDC. (2016). *Impact of Ebola on the Healthcare System*. *3*(8), 15000650. [https://doi.org/10.1016/S2214-109X\(15\)00065-0](https://doi.org/10.1016/S2214-109X(15)00065-0).
- Corman, V. M., Landt, O., Kaiser, M., Molenkamp, R., Meijer, A., Chu, D. K., Bleicker, T., Brünink, S., Schneider, J., Schmidt, M. L., Mulders, D. G., Haagmans, B. L., van der Veer, B., van den Brink, S., Wijsman, L., Goderski, G., Romette, J. L., Ellis, J., Zambon, M., ... Drosten, C. (2020). Detection of 2019 novel coronavirus (2019-nCoV) by real-time RT-PCR. *Euro Surveillance : Bulletin Europeen Sur Les Maladies Transmissibles = European Communicable Disease Bulletin*, *25*(3), 1–8. <https://doi.org/10.2807/1560-7917.ES.2020.25.3.2000045>
- Fall, I. S., Rajatonirina, S., Yahaya, A. A., Zabulon, Y., Nsubuga, P., Nanyunja, M., Wamala, J., Njuguna, C., Lukoya, C. O., Alemu, W., Kasolo, F. C., & Talisuna, A. O. (2019). Integrated Disease Surveillance and Response (IDSR) strategy: Current status, challenges and perspectives for the future in Africa. *BMJ Global Health*, *4*(4), 1–11. <https://doi.org/10.1136/bmjgh-2019-001427>
- Gralinski, L. E., & Menachery, V. D. (2020). Return of the coronavirus: 2019-nCoV. *Viruses*, *12*(2), 1–8. <https://doi.org/10.3390/v12020135>
- Janet V Diaz, John Appiah, Lisa Askie, April Baller, Anshu Banerjee, Shannon Barkley, Silvia Bertagnolio, Bianca Hemmingsen, Mercedes Bonet, J. C. (2021). Clinical management Clinical management Living guidance COVID-19. *World Health Organization, January*.
- Jiang, F., Deng, L., Zhang, L., Cai, Y., Cheung, C. W., & Xia, Z. (2020). Review of the Clinical Characteristics of Coronavirus Disease 2019 (COVID-19). *Journal of General Internal Medicine*, *2019*, 1–5. <https://doi.org/10.1007/s11606-020-05762-w>

- Kim, D., Lee, J., Yang, J., Kim, J. W., Kim, V. N., & Chang, H. (2020). *The architecture of SARS-CoV-2 transcriptome*. 1–23.
- Lauer, S. A., Grantz, K. H., Bi, Q., Jones, F. K., Zheng, Q., Meredith, H. R., Azman, A. S., Reich, N. G., & Lessler, J. (2020). The Incubation Period of Coronavirus Disease 2019 (COVID-19) From Publicly Reported Confirmed Cases: Estimation and Application. *Annals of Internal Medicine*, 2019. <https://doi.org/10.7326/M20-0504>
- Nagbe, T., Yealue, K., Yeabah, T., Rude, J. M., Fallah, M., Skrip, L., Agbo, C., Mouhamoud, N., Okeibunor, J. C., Tuopileyi, R., Talisuna, A., Yahaya, A. A., Rajatonirina, S., Frimpong, J. A., Stephen, M., Hamblion, E., Nyenswah, T., Dahn, B., Gasasira, A., & Fall, I. S. (2019). Integrated disease surveillance and response implementation in Liberia, findings from a data quality audit, 2017. *The Pan African Medical Journal*, 33(Supp 2), 10. <https://doi.org/10.11604/pamj.supp.2019.33.2.17608>
- National Public Health Institute of Liberia. (2020). *Liberia Integrated Disease Surveillance and Response Epidemiology Bulletin, Epi week 43*. 826(43), 7.
- National Public Health Institute of Liberia & Ministry of Health, L. (NPHIL & M. (2020). *Liberia COVID-19 Daily Situational Report No 2*.
- Shishir Paudel, Ganesh Dungal, Anisha Chalise, Tulsi Ram Bhandari, O. D. (2020). *The Coronavirus Pandemic_ What Does the Evidence Show_ - PubMed*.
- Shoman, H., Karafillakis, E., & Rawaf, S. (2017). The link between the West African Ebola outbreak and health systems in Guinea , Liberia and Sierra Leone : a systematic review. *Globalization and Health*, 1–22. <https://doi.org/10.1186/s12992-016-0224-2>
- World Health Organization. (2020). *WHO Director-General's remarks at the media briefing on 2019-nCoV on 11 February 2020*.
- World Health Organization (WHO). (2021). *The Clinical Laboratory_ A Key Player in Diagnosis and Management of COVID-19*.
- Xu, Z., Shi, L., Wang, Y., Zhang, J., Huang, L., Zhang, C., Liu, S., Zhao, P., Liu, H., Zhu, L., Tai, Y., Bai, C., Gao, T., Song, J., Xia, P., Dong, J., Zhao, J., & Wang, F. S. (2020). Pathological findings of COVID-19 associated with acute respiratory distress syndrome. *The Lancet Respiratory Medicine*, 2600(20), 19–21. [https://doi.org/10.1016/S2213-2600\(20\)30076-X](https://doi.org/10.1016/S2213-2600(20)30076-X)
- Zhu, N., Zhang, D., Wang, W., Li, X., Yang, B., Song, J., Zhao, X., Huang, B., Shi, W., Lu, R., Niu, P., Zhan, F., Ma, X., Wang, D., Xu, W., Wu, G., Gao, G. F., & Tan, W. (2020). A novel coronavirus from patients with pneumonia in China, 2019. *New England Journal of Medicine*, 382(8), 727–733. <https://doi.org/10.1056/NEJMoa2001017>

