Guidance for completing Case Record Forms (CRFs) for the World Health Organization (WHO) the International Severe Acute Respiratory and Emerging Infection Consortium (ISARIC) for the Short PeRiod IncideNce sTudy of Severe Acute Respiratory Infection (SPRINT-SARI)

Organisation of CRFs:

The clinical information at **admission** should be recorded in the **SPRINT-SARI Inclusion Criteria Case Record Form (SSIC CRF**), the **Rapid Case Record Form (Rapid CRF)** OR the **Core Presentation/Outcome Case Report Form (Core CRF)** in all cases.

Each site may choose the amount of data to collect based on available resources. Ideally, data on patients presenting early in an outbreak will be collected using the Tier 2 schedule of forms outlined below. The decision is up to the site Investigators. All high quality data are valuable for analysis. Prior to commencement participating sites will be asked to identify which tier they have the capacity to complete on all patients during the study period. Sites are encouraged to continue with the tier that they plan to use for the duration of the study.

Tier	CRFs completed	Site Resource Level
Tier 0	• SSIC CRF; and • Rapid CRF.	Sites that do not have the resources to collect Tier 1. Or during an epidemic or sites that have already enrolled large numbers of patients on the tier 1/2 schedule

Tier 1	• SSIC CRF;
	• Core CRF; and
	• Daily CRF day 1 of:
	  ○ hospital admission; and
	  ○ ICU admission (if applicable).
	(note: day 1 ICU and hospital admission could be the same day)
		Sites that do not have the resources to collect additional daily data included in Tier 2

Tier 2	• SSIC CRF;
	• Core CRF;
	• Daily CRF, day 1 & 2 of:
	  ○ hospital admission; and
	  ○ ICU admission (if applicable).
		Sites with available resources.

Tier 3	• Epidemiology CRF.	Additional CRF modules are available to be completed in addition to any of the Tiers above according to the objectives of the site.

How do I complete the Case Report Forms (CRFs) for SARI?

GENERAL GUIDANCE

- The Completion Guidelines are designed to accompany the case report form (CRF). They provide explanations of the CRF questions and should be used in conjunction with the CRF.
- The CRF is designed to collect data obtained through examination, interview and review of hospital notes. Data may be collected retrospectively if the patient is enrolled after the admission date.
- Participant Identification Numbers consist of a 3-digit network code, a 3 digit site code and a 4 digit participant number. You can obtain a network code and site code by registering on the data management system at www.cliresdms.org by contacting data@iddo.org. Participant numbers should be assigned sequentially for each site beginning with 0001. In the case of a single site recruiting patients on different wards, or where it is otherwise difficult to assign sequential numbers, it is acceptable to assign numbers in blocks or incorporating alpha characters. E.g. Ward X will assign numbers from 0001 or A001 onwards and Ward Y will assign numbers from 5001 or B001 onwards. Enter the Participant Identification Number at the top of every page.
- Data may be entered to the central database at www.cliresdms.org or to your site/network's independent database (if applicable).
- In the case of a patient transferring between study sites, it is preferred to maintain the same Participant Identification Number across the sites. When this is not possible, space for recording the new number is provided.
- Complete every line of every section, except for where the instructions say to skip a section based on certain responses.
- Selections with square boxes (☐) are single selection answers (choose one answer only). Selections with circles (**O**) are multiple selection answers (choose as many answers as are applicable).
- Mark 'N/A' for any results that are not available, not applicable or unknown. For laboratory values, enter 'N/A' in the data space when results are not available, not applicable or unknown.
- Avoid recording data outside of the dedicated areas. Sections are available for recording additional information.
- We recommend writing clearly in ink, using BLOCK-CAPITAL LETTERS.
- Place an (X) when you choose the corresponding answer. To make corrections, strike through (-------) the data you wish to delete and write the correct data above it. Please initial and date all corrections.
- Please keep all of the sheets for a single patient together e.g. with a staple or patient-unique folder.

- Please enter data on the electronic data capture system at www.cliresdms.org
- Please contact us at data@iddo.org if we can help with databases, if you have comments and to let us know that you are using the forms.

SPRINT-SARI INCLUSION CRITERIA CASE REPORT FORM

The Case Report Form (CRF) requires the documentation of the inclusion criteria met by each patient at the time of admission into SPRINT-SARI. This will allow for a detailed analysis of different SARI case definitions and the associated operational characteristics.

Patients will be eligible for the study if the patient meets the case definition for SARI:

Section 1: INCLUSION CRITERIA

1.1 Suspected or proved acute respiratory infections

At time of enrolling the patient in SPRINT-SARI if an acute respiratory infection is suspected or proved.

A proven acute respiratory injection refers to a laboratory confirmed known lower respiratory tract pathogen or radiological evidence of focal or diffuse lung infiltrates or both that the treating clinician believes is caused by an acute respiratory infection.

A suspected acute respiratory infection refers to an acute respiratory infection that is clinically diagnosed and laboratory testing is unavailable, has not been performed, or final results are not available at the time of enrolment.

Place a cross (X) in the appropriate box ('yes', 'no').

1.2 New admission with symptom onset within the previous 14 days (required for inclusion)

Please place a cross (X) in the appropriate box ('yes', 'no') if the patient is admitted to the hospital within 14 days of the first symptom onset that the clinician believes is attributable to this proven or suspected acute respiratory infection. If the patient has had symptoms for longer than 14 days they are not eligible for SPRINT-SARI.

1.3 Experience of the following symptoms during this illness episode

Please place a cross (X) in the appropriate box ('yes', 'no') for the symptoms that are met at the time of presentation to hospital, one or more of the following required for admission:

1.3.1 A history of feverishness or measured fever of ≥38°c or ≥100.4°f

1.3.2 **Cough** (if no information regarding the presence or absence of cough is recorded then no should be crossed)

1.3.3 Dyspnoea (shortness of breath) OR Tachypnoea

Tachypnoea is defined as

i) a respiratory rate of ≥50 breaths per minute for patients who are aged < 1 year;
ii) ≥40 breaths/minute for ages 1-5 years,
iii) ≥30 breaths per minute in ages 5 - 12 years of age, and
iv) ≥20 breaths / minute for ages ≥ 13 years of age (22).

For children and adults who are able to report dyspnoea, the presence of either dyspnoea or tachypnoea can be used to meet entry criteria. For children and adults who are NOT able to report dyspnoea, ONLY tachypnoea can be used to meet the inclusion criteria.

THE RAPID CASE REPORT FORM (RAPID CRF)

Sections 1-3 of the form should be completed at the earliest time possible. Complete section 4 for ICU/HDU admission (if applicable). Complete section 5 & 6 after discharge/death or transfer. We anticipate that most of the sections can be completed through review of hospital case-notes, but certain information may not be routinely recorded in the patient's hospital case-notes. Therefore, direct questioning of the patient, their next-of-kin/guardian or facility staff may be required in some circumstances. If additional direct questioning is not feasible the CRF should be completed from the information that is available. For example; direct questioning may be required to answer Section 3.

Section 1: SITE

1.1 Clinical centre name:

Enter the name of the clinical centre (e.g. hospital name) where the patient is currently being assessed.

1.2 Country

Enter the name of the country where the clinical centre is located.

1.3 Enrolment date:

Enter date of patient study enrolment in the format of day/month/year (DD/MM/YYYY). For example, the date of birth of 16th May 1976 should be entered as 16/05/1976

Section 2: DEMOGRAPHICS

2.1 Sex at Birth

Place a cross (X) in the relevant box to indicate the physical sexual characteristics of the patient at birth (e.g. female or male).

2.2 Birth Date

Enter the patient's birth date in the day/month/year format (DD/MM/YYYY). For example, the date of birth of 16th May 1976 should be entered as 16/05/1976.

If the date of birth is not known, please enter any information that is available e.g. year only and insert NA/NA for the day and month components. For example, if it is only known that the patient was born in 1981, enter NA/NA /1981.

2.3 Estimated age

If birth date is not known, enter the approximate age of the patient in years (or months if less than 1y) at the time of admission to the clinical centre (hospital).

2.4 Pregnant

Place a cross (X) in the appropriate box (yes, no, unknown, N/A) If yes, please indicate the gestational age of the foetus with the approximate number of weeks.

Section 3: ONSET & ADMISSION

3.1 Symptom onset date of first/earliest symptom:

The date on which the symptoms associated with the patient's current presentation of confirmed or suspected SARI-causing infection began or were first noted. Please avoid including symptoms that are chronic and/or only related to an underlying condition, unless the suspected/confirmed SARI illness began with worsening of chronic symptoms (where this is the case, enter the date when the worsening of chronic symptoms began). If there are multiple symptoms, enter the date of the earliest symptom. For example, if the patient reported fever followed by cough and shortness of breath, enter the date the fever started. If the patient reported sore throat followed by cough and then fever, enter the date the sore throat started.

3.2 Admission date at this facility

Enter the calendar date on which the patient was admitted to this clinical or medical facility with the format of day/month/year (DD/MM/YYYY).

Section 4: INTENSIVE CARE OR HIGH DEPENDENCY UNIT ADMISSION

This section refers to the point at which the patient was admitted to the clinical centre (hospital) intensive care unit or high dependency care unit (ICU or HDU) with a suspected or confirmed infection causing SARI. This section is to be filled out 24hours after first admission to the ICU/HDU.

4.1 ICU Admission (or high dependency unit)?

This relates to whether the patient was admitted to the ICU or HDU during this hospitalisation. Place a cross (X) in the appropriate box: yes, (if admitted) or no (if not admitted to ICU or HDU).

If the answer is YES, please indicate the date on which the patient was first admitted to the ICU/HDU with the format day/month/year (DD/MM/YYYY) and fill in all parts as requested in this section.

4.2 Record the worst value in the first 24hours of ICU/HDU for each vital sign

This relates to abnormal values associated with the patient's current presentation of suspected or confirmed SARI. Please cross (X) all boxes as requested by marking the appropriate choice (yes, no, N/A) and enter the appropriate value. The worst measurement may come from different measurements or samples taken on the same day, e.g. the worst White Blood Cell count (WBC) and the worst Haemoglobin (Hb) might come from different samples collected on the same day. If one or more data points requested are not available mark "NA" in the data field. Please fill in all values as requested for the following:

4.2.1 Mechanical ventilation

Mechanical ventilation means that patient has undergone tracheal intubation, for the purpose of invasive mechanical ventilation. Invasive ventilation is a method to mechanically assist or replace spontaneous breathing in patients by use of a powered device that forces oxygenated air into the lungs. The mode of intubation may be orotracheal, nasotracheal, or via a cricothyrotomy or tracheotomy. If invasive ventilation was used at any time during the patient's first 24 hours of ICU/HDU admission period place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

4.2.2 FiO_2 (0.21-1.0)

If the patient was intubated and ventilated during the first 24hours in ICU/HDU, enter the fraction of inspired oxygen (FiO_2 0.21 -1.0) as determined by the mechanical ventilator settings. The value entered should reflect the FiO_2 setting with the **lowest** ratio of PaO_2/SpO_2 to FiO_2 used during the patient's first 24 hours of ICU/HDU admission period. If the FiO_2 is not known, place NA in the data field.

To determine the PaO_2/FiO_2 ratio, the PaO_2 is measured in mmHg and the FiO_2 is expressed as a decimal between 0.21 and 1. As an example, if a patient has a PaO_2 of 60 mmHg while receiving 60% oxygen, then the PaO_2/FiO_2 is 60/0.6 = 100 mmHg.

To convert kPa to mmHg please multiply kPa by 7.5. As an example, if a patient has a kPa of 11, 11 X 7.5 = 82.5 mmHg.

4.2.3 **SaO_2** (at time of FiO_2)

SaO_2 (oxygen saturation) as determined by arterial blood gas analysis or transcutaneous pulse oximetry. This SaO_2 must correspond with the lowest FiO_2 measurement documented in 4.2.2 Please fill in the lowest value in percentage (%). If the SaO_2 is not known, place NA in the data field.

4.2.4 **PaO_2** (at time of FiO_2)

PaO_2 (partial pressure of oxygen in blood) as determined by arterial/venous/capillary blood gas analysis. This PaO_2 must correspond with the lowest FiO_2 measurement documented in 4.2.2. Please fill in the lowest value in either mmHg or kPa depending on the output of your blood gas analyser. If the PaO_2 is not known, place NA in the data field. Place cross (X) in the box indicating which measurement was documented 'kPa' or 'mmHg')

4.2.5 Platelet Count

Complete this field with the platelet (thrombocyte) count determined by laboratory analysis of a venous or arterial blood sample. Please fill in the **lowest** value in platelets per litre (e.g. $x10^9$/L) in the first 24 hours of ICU/HDU admission. If the platelet count is not known, place NA in the data field.

4.2.6 Mean arterial pressure (MAP)

Complete this field with the mean arterial pressure (in mmHg) as determined by invasive (arterial) blood pressure measurement, if a non-invasive/manual method was used e.g. sphygmomanometer calculate the MAP using the following formula MAP = [(2 x diastolic)+systolic] / 3 if blood pressure measured non-invasively. Please fill in the lowest value recorded during the 24hours period. Please fill in the **lowest** value recorded during the first 24hours of ICU/HDU admission. If the MAP is not known, place NA in the data field.

4.2.7 **Glasgow Coma Score** (GCS /15)

Insert the lowest calculated value (between 3-15) documented during the first 24 hours of ICU/HDU admission following the assessment of eye, motor and verbal responses, please add the score for eye, verbal and motor responses and enter the total score in the CRF:

Glasgow Coma Score

		Score
Eye Response	Does not open eyes	1
	Opens eyes in response to painful stimuli	2
	Opens eyes in response to voice	3
	Opens eyes spontaneously	4
Verbal Response	Makes no sounds	1
	Incomprehensible sounds	2
	Utters inappropriate words	3
	Confused, disoriented	4
	Oriented, converses normally	5
Motor Response	Makes no movements	1
	Extension to painful stimuli (decerebrate response)	2
	Abnormal flexion to painful stimuli (decorticate response)	3
	Flexion / Withdrawal to painful stimuli	4
	Localises painful stimuli	5
	Obeys commands	6

If the patient is intubated and/or sedated please document the patients GCS recorded closest to but prior to intubation and / or sedation. If there is no documented GCS prior to intubation and/or sedation please enter NA in the data field.

4.2.8 Urine flow rate

Record the patient's urine output (in ml/24hours) over the first 24hrs of ICU/HDU admission. If this is estimated place a cross (X) in the box marked 'estimated'.

Record the highest value in the first 24hours of ICU/HDU for each vital sign

4.2.9 Total Bilirubin

Complete this field with the **highest** *total* bilirubin level (in µmol/L). Most often this is tested in blood (venous or arterial blood), but other fluids extracted from the body may be used depending on the purpose of the test. Record a measurement taken during the first 24hours of ICU/HDU admission. To convert from mg/dl to µmol/L multiply by 17.1. If the Bilirubin is not known, place NA in the data field.

4.2.10 Creatinine

Complete this field with the **highest** serum creatinine level (in µmol/L or mg/dL – cross (X) appropriate box) measured in venous or arterial blood recorded during the first 24hours of ICU/HDU admission. If the Creatinine is not known, place NA in the data field.

4.3 Vasopressor/inotropic support on 1st day of ICU/HDU admission?

A **vasopressor** is a pharmaceutical agent that causes vasoconstriction, thereby increasing blood pressure. Agents include norepinephrine, epinephrine, vasopressin, terlipressin and phenylephrine. Some inotropes also demonstrate vasopressor activity.

An **inotrope** is a pharmaceutical agent that alters the force of myocardial contractility. Commonly used 'positive' inotropes include dobutamine, dopamine, milrinone and adrenaline (epinephrine).

If the patient received a vasopressor or inotrope for at least one hour during the first 24hours of ICU/HDU admission, place a cross (X) in the box marked 'yes' in one of the following three options. If they did not, place a cross in the box marked 'no'.

4.4 Most recent ICU/HDU discharge date:

The most recent calendar date on which the patient was discharged from the intensive care unit in format day/month/year. This section may need to be revised if the patient has more than one ICU/HDU admission during a single hospital admission.

4.5 Total ICU/HDU duration.

This refers to the total length of time the patient was in an ICU/HDU unit throughout their hospital admission for SARI. The length of time (in days) that the patient was in the intensive care unit, this should include all ICU admissions if there were more than 1. Count any day in which the patient was in ICU/HDU during that 24 hr period. This section may therefore need to be revised if the patient has more than one ICU/HDU admission.

Section 5: INFECTIOUS RESPIRATORY DIAGNOSIS

Check the disease-specific box(es) of any pathogen which the patient is suspected or confirmed to have. 'yes, confirmed' refers to a laboratory confirmed pathogen, 'yes, probably' refers to a pathogen that is clinically diagnosed and laboratory testing is unavailable or has not been performed. Place a cross (X) in the appropriate box, of any suspected or laboratory-confirmed case of:

Influenza (A/H3N2, A/H1N1pdm09, B) 'yes, confirmed case', 'yes, probable', 'no' or 'other (e.g. H7N9, H5N1)'.

Coronavirus (MERS-CoV) ' yes, confirmed case', 'yes, probable', 'no' or 'N/A''.

If the pathogen is 'Other', please fill in the name of the suspected pathogen.

Clinical Pneumonia 'yes', or 'no'. Clinical Pneumonia is an acute inflammatory process of the lungs due to suspected or proven infection with clinical and, if available, radiological evidence of focal or diffuse lung infiltrates that the treating clinician believes to be due to pneumonia.

If the final diagnosis is unknown or non-infective place a cross in Unknown/Non infective (eg. pulmonary embolism).

Section 6: OUTCOME

During hospital admission/stay did the patient receive any of the following treatments? Indicate as appropriate:

6.1 Oxygen therapy:

If oxygen (at any concentration >21%) was given by any means of delivery at any point during the patient's hospital stay, place a cross in the box marked 'yes'. Oxygen can be delivered by invasive or

non-invasive mechanical ventilation, and supplemental oxygenation (O_2) via facemask/nasal prongs/hood. Place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

6.2 Invasive ventilation

Invasive ventilation means that patient has undergone tracheal intubation, for the purpose of invasive mechanical ventilation. Invasive ventilation is a method to mechanically assist or replace spontaneous breathing in patients by use of a powered device that forces oxygenated air into the lungs. The mode of intubation may be orotracheal, nasotracheal, or via a cricothyrotomy or tracheotomy. If invasive ventilation was used at any time during the patient's hospital admission for SARI, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

6.3 Non-invasive ventilation

If the patient received non-invasive mechanical ventilation (NIV), defined as the provision of ventilatory support through the patient's upper airway using **a mask or similar device**, at any time during their hospital stay, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

Please note that BiPAP and CPAP ventilation modes are not unique to NIV; they can also be given via invasive mechanical ventilation.

6.4 ECMO/ECLS

Extracorporeal membrane oxygenation (ECMO) is an extracorporeal technique of providing cardiac and respiratory support to a patient, with the ability to oxygenate and remove carbon dioxide from blood. Extracorporeal Life Support (ECLS) is a variation of cardiopulmonary bypass, it maintains tissue oxygenation for days to weeks in patients with life threatening respiratory or cardiac failure (or both). If the patient received ECMO/ECLS at any time during their hospital stay, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

6.5 Dialysis

Dialysis or renal replacement therapy includes haemodialysis, peritoneal dialysis (PD), intermittent haemodialysis (IHD), on-line intermittent haemofiltration (IHF), on-line haemodiafiltration (IHDF), continuous haemofiltration (CHF) and continuous haemodiafiltration (CHDF), continuous venovenous haemofiltration (CVVH), continuous venovenous haemodialysis (CVVHD), continuous venovenous haemodiafiltration (CVVHDF), slow continuous ultrafiltration (SCUF), continuous arteriovenous haemofiltration (CAVHD) and sustained low-efficiency dialysis (SLED).If the patient received dialysis or RRT during their hospital stay, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

6.6 Multiple ICU/HDU admissions

If the patient was admitted to an ICU/HDU more than once during their hospitalisation place a cross (X) in the appropriate box: yes, (if readmitted) or no (if this is not the case).

6.7 Outcome

This section refers to the outcome of the patient's illness due to suspected or confirmed SARI infection. This section may need to be completed at the time of hospital discharge of soon after, place a cross in one of the boxes that clearly indicates the known outcome of this patient, there are five choices. If the answer is not known, place a cross in the box marked 'N/A':

6.7.1 Alive at discharge If, at the time the outcome section is completed, the patient was alive when discharged from the clinical or medical facility, place a cross (X) in the box.

6.7.2 Hospitalisation If the patient remains admitted as an inpatient at the clinical centre or medical facility at the time the outcome section is completed, then place a cross (X) in this box'.

6.7.3 Transfer to other facility If the patient was transferred (moved) from the current centre or medical facility to another medical facility, please place a cross (X) in this box.

6.7.4 Death (Deceased) If the patient is known to have died in the clinical centre or medical facility during their hospital stay with confirmed or suspected SARI-causing infection, please place a cross (X) in this box.

6.7.5 Palliative discharge If the patient is known to have had palliative discharge (e.g. discharged from hospital with the expectation that they will die imminently and require palliative care only), please place a cross in this box'.

6.7.6 N/A If the answer is not known to any of the above options, place a cross in the box marked 'N/A'.

CORE PRESENTATION CASE REPORT FORM (Core CRF)

Complete Sections 1-3 of the form at hospital admission, sections 4-5 may be completed during the patient's hospital stay, ideally as soon as variable values are available, whereas other sections (6-9) need to be completed at the end of the hospital stay, or once the outcome of the patient's hospital stay is known.

We anticipate that most of the sections can be completed through review of hospital case-notes, but certain information may not be routinely recorded in the patient's hospital case-notes. Therefore, direct questioning of the patient, their next-of-kin/guardian or facility staff may be required in some circumstances. For example; direct questioning may be required to answer the following questions from Section 1:

- Has the patient travelled within 14 days of symptom onset? If so, where?
- In the previous 14 days, did the patient have close contact with live animals? If so, which?

If hospital case-notes do not provide the level of detail required to complete other sections and the patient remains in hospital, we recommend, where possible, that the required information is obtained through further direct questioning of the patient (or their next of kin/guardian, as appropriate).

DETAILED GUIDANCE ON COMPLETING THE CORE CRF

I] Patient identification number

Assign a unique, anonymizing patient identification code to each patient. Please refer to General Guidance on pages 1 and 2 for more information.

Section 1: DEMOGRAPHICS

1.1 Clinical centre name

Enter the name of the clinical centre (e.g. hospital name) where the patient is currently being assessed.

1.2 Country

Enter the name of the country where the clinical centre is located.

1.3 Enrolment date

Enter date of patient enrolment in the format of day/month/year (DD/MM/YYYY). For example, the date of birth of 16th May 1976 should be entered as 16/05/1976.

1.4 Sex at Birth

Place a cross (X) in the relevant box to indicate the physical sexual characteristics of the patient at birth (e.g. female or male).

1.5 Birth Date

Enter the patient's birth date in the day/month/year format (DD/MM/YYYY). For example, the date of birth of 16th May 1976 should be entered as 16/05/1976.

If the date of birth is not known, please enter any information that is available e.g. year only and insert NA/NA for the day and month components. For example, if it is only known that the patient was born in 1981, enter NA/NA /1981.

1.6 If birth date unknown: Estimated age

If birth date not known, enter the approximate age of the patient in years (or months if less than 1y) at the time of admission to the clinical centre (hospital).

1.7 Pregnant

Place a cross (X) in the appropriate box (yes, no, unknown, N/A). If yes, please indicate the gestational age of the foetus with the approximate number of weeks.

1.8 **Admission Weight** (whole number)

This refers to body weight at the time of admission to the clinical centre, or as close to the date of admission as possible. Ideally, this should be measured by clinical staff, but if this is not possible, patient-reported body weight or clinical staff estimation of patient's body weight may be entered instead. Please indicate with X the appropriate unit of measurement, kg (kilograms) or lbs (pounds). If the patient's weight is not known, please place an (X) in the appropriate box.

1.9 Height

Please enter the patient's height and cross the appropriate unit, centimetres (cm) or inches. Ideally, height should be measured by a clinician. If this is not possible, patient-reported height may be entered instead. Please convert height measured in metres to centimetres. For example, 1.78 metres should be entered as 178 and 'cm' box cross (X). For height reported in feet and inches, please convert to inches. There are 12 inches in one foot. As an example, 5 feet and 11 inches (5'11") would be entered as '71' (and inches box cross (X)). If the patient's height is not known, please place a cross (X) in the appropriate box.

1.10 If less than 5 years old: Mid-upper-arm circumference

In clinical practice if you routinely recorded the mid-upper-arm-circumference (MUAC) of a child aged less than 5 years, please document the measurement taken in millimetres (mm). If you don't routinely record MUAC or if the patient is an adult, please place a cross (X) in the box indicating N/A.

To record MUAC,
1) Bend the patients elbow to a 90^0 angle
2) Place the tape measure at the tip of the patients shoulder and extend it to the tip of a bent elbow
3) Mark the midpoint between the two on the patients arm.
4) Slide the tape around the midpoint and take the reading.

1.11 **Ethnic Group** (check all that apply)

Ethnic group is a social group characterised by a distinctive social and cultural tradition that is maintained from generation to generation. Members share a common history and origin and a sense of identification with the group. They have similar and distinctive features in their lifestyle habits and shared experiences. They often have a common genetic heritage which may be reflected in their

experience of health and disease. Please enter all that apply of the following choices which best describe the patient's ethnicity or major ethnic group. Please exclude nationality as nations often include many different ethnic groups (For example, Singaporean is the nationality but the ethnic grouping within Singapore could be East Asian, South Asian etc.) Cross (X) all that apply of the following: Arab, Black, East Asian, South Asian, West Asian, Latin American, White, Aboriginal/First Nations, Other.

If 'Other' write the full name of the ethnic group of the patient. Please *do not* enter a letter or number corresponding to a local/national ethnicity coding system.

If the patient's ethnicity is not known, please place a cross (X) in the 'N/A' box.

1.12 Admission date at this facility

Enter the calendar date on which the patient was admitted to this clinical or medical facility in day/month/year (DD/MM/YYYY) format.

Study Rule of Transfer:

Please collect as much information as possible on patients who are transferred between hospitals, either from the patients' medical records at the participating hospital +/- transferring notes

- ***Between two hospitals/facilities participating in SPRINT-SARI***

Wherever possible, please continue to collect as much data as possible from the patients' medical records at the participating hospital +/- transferring notes to complete your CRF Tier.

- ***Transfer from a hospital/facility NOT participating in SPRINT-SARI***

If the transferring hospital is not participating in SPRINT-SARI and the patient meets the inclusion criteria please collect as much data as possible from the patients' medical records at the participating hospital +/- transferring notes.

1.13 Transfer from other facility?

This refers to when the patient was initially receiving care at another clinical or medical facility (hospital) for the same illness and then transferred to the current facility and if the facility is participating in the study. Please place a cross in one of the boxes ('yes – facility is a study site', 'yes-facility is not a study site' 'no' or 'N/A'), according to the answer to the question.

1.13.1 If YES: **Name of transfer facility**

If the patient was transferred from another facility (hospital), please enter the name of the facility. This is in case further clinical details about the case are required from that centre.

1.13.2 If YES: **Admission date at transfer facility**

If the patient was transferred from another facility (hospital), please enter the calendar date on which the patient was admitted to the other clinical or medical facility, in day/month/year (DD/MM/YYYY) format. For example, if the patient was admitted to the other facility on 30th December 2012, you would write 30/12/2012. If the date of admission to the other facility is not known, please place a cross (X) in the appropriate box.

1.13.3 If YES-Study Site: **Participant # at transfer facility**

If the patient was transferred from another facility participating in the study, please place a cross (X) in the appropriate box. 'Same as above' place a cross (X) in this box if you are using the participant ID number generated at the transferring facility prior to admission to your facility. 'Different' please place a cross (X) in the box if you are using a different participant ID number and record the participants ID number at the previous facility in the boxes provided. If you do not know the participants ID number generated at the transferring facility please place a (X) in the box N/A.

1.14 Travel in the 14 days prior to first symptom onset?

This refers to travel to another part of the country or abroad to another country within 14 days before symptoms relating to the current illness began. Place a cross (X) in one of the boxes, as appropriate ('yes', 'no' or 'N/A').

1.14.1 If yes, state location(s) of travel & date(s):

If the patient has travelled away from their usual place of residence within 14 days of symptom onset, enter the location that was visited. Up to two locations can be entered. Please enter the name of the city/town/village visited and the country.

For each place/country visited, please enter the date that they returned to their usual place of residence. The date should be entered in day/month/year format (DD/MM/YYYY). For example, if the patient returned on 4th January 2013, enter 04/01/2013.

If further space is required to enter additional locations, please use the SUPPLEMENTARY TO CORE CRF.

1.15 Contact with animals, raw meat or insect bites in the 14 days prior to first symptom onset?

Close contact with live animals refers to:

- direct physical contact with, or having been in close proximity to, live animals, OR
- having visited an environment containing live animals (e.g. farm, market, zoo), OR
- a history of insect bites (e.g. bites from ticks or fleas), OR
- having been involved in the slaughter or dissection of animals or having visited an environment where animals are slaughtered or dissected, OR
- having been involved in the veterinary care of animals

These events must have occurred within the 14 day period leading up to the onset of symptoms. Contact with household pets (e.g. cats and dogs) or other animals kept within the home should also be recorded. Mark a (X) in one of the box options ('Yes', 'No', or 'N/A').

If yes, complete the CORE – SECTION 1 ANIMAL EXPOSURE in the SUPPLENTARY TO CORE CRF

Section 2: COMORBIDITIES & RISK FACTORS

Comorbidities and risk factors are illnesses/risk factors which were known to exist prior to admission with the current illness *and* remain active problems. For example, an active cancer requiring chemotherapy should be recorded, whereas a cancer that was successfully cured ten years ago should not be recorded.

2.1 Comorbidities - Charlson Index will be calculated for each patient at analysis

For each condition listed, place a cross (X) in the appropriate box ('Yes', 'No' or 'N/A'). It is important that this is done for all of the conditions listed.

2.1.1 Chronic cardiac disease (not hypertension)

This may be defined as a disease that progressively causes deterioration of the heart and its functioning. In some cases the direct cause of the disease may not be established. Some causes may include an infection that infiltrates the bloodstream that causes damage to the heart or having a genetic imperfection. These could involve:

Congenital Heart Disease (haemodynamically significant) is defined as any structural or functional cardiac disorder that is present from birth which results in (1) need for medication to control congestive heart failure or (2) moderate to severe pulmonary hypertension, or (3) cyanotic heart disease. Excludes asymptomatic ventricular septal defects and patent ductus arteriosus e.g. those where no medication is required

Congestive heart disease is defined as any structural or functional cardiac disorder that impairs the ability of the ventricle to fill with or eject blood. It is characterized by specific symptoms, such as dyspnoea and fatigue, and signs, such as fluid retention. There are many ways to assess cardiac function. However, there is no diagnostic test for heart failure, since it is largely a clinical diagnosis that is based upon a careful history and physical examination.

2.1.2 Chronic pulmonary disease (not asthma)

This is defined as any pulmonary condition other than asthma that is a disease or disorder of slow progression and long duration which causes continuous or episodic periods of illness and/or incapacity.

2.1.3 Asthma (physician diagnosed)

This is defined as clinician-diagnosed asthma (a common chronic disorder of the airways that is complex and characterized by variable and recurring symptoms, airflow obstruction, bronchial hyper-responsiveness, and underlying inflammation). Current pharmaceutical intervention - for prevention or treatment of symptoms - is not a pre-requisite for the inclusion of this diagnosis.

2.1.4 Chronic Kidney Disease

This is defined as a clinician-diagnosed chronic kidney disease (CKD, also known as chronic kidney failure). The KDIGO and KDOQI definition of chronic kidney disease is kidney damage for 3 months, as defined by structural or functional abnormalities of the kidney, with or without decreased glomerular filtration rate (GFR), that can lead to decreased GFR, manifest by either:

- Pathologic abnormalities; or
- Markers of kidney damage, including abnormalities in the composition of the blood or urine, or abnormalities in imaging tests;
- GFR <60 mL/min/1.73 m2 for 3 months, with or without kidney damage.

2.1.5 Moderate or severe liver disease

This is defined as cirrhosis with portal hypertension, with or without bleeding or a history of variceal bleeding.

2.1.6 Mild liver disease

This is defined as cirrhosis without portal hypertension *or* chronic hepatitis

2.1.7 Chronic neurological disease

This is defined as conditions in which respiratory function may be compromised due to neurological disease (e.g. polio syndrome sufferers), including individuals with cerebral palsy, multiple sclerosis and related or similar conditions; or hereditary and degenerative disease of the nervous system or muscles; or severe neurological or severe learning disability, or stroke with deficit affecting safety of swallow.

2.1.8 Hemiplegia / paraplegia

Hemiplegia is defined as chronic and persistent total paralysis of the arm, leg, and trunk on the same side of the body. **Paraplegia** is defined as chronic and persistent complete paralysis of the lower half of the body including both legs.

2.1.9 Metastatic solid tumour

This is defined as currently active neoplastic growth or deposit that has spread via lymph or blood to an area of the body that is remote from the primary neoplasm (tumour).

2.1.10 Malignancy neoplasm (including leukaemia and lymphoma)

This refers to any known malignant neoplastic disease, including haematological malignancies, that is considered to be biologically active. A tumor composed of atypical neoplastic, often pleomorphic cells that invade other tissues. Malignant neoplasms often metastasize to distant anatomic sites and may recur after excision. The most common malignant neoplasms are carcinomas (adenocarcinomas or squamous cell carcinomas), Hodgkin and non-Hodgkin lymphomas, leukemias, melanomas, and sarcomas. It specifically does not include malignancies that have been cured or where there is no evidence of on-going disease relating to that malignancy following treatment.

2.1.11 AIDS/HIV

This refers to laboratory-confirmed HIV-1 or HIV-2 infection (irrespective of the CD4 lymphocyte count/percentage or HIV viral load in blood), or a patient with an AIDS-defining condition.

2.1.12 Obesity (as defined by clinical staff)

This refers to patients for whom an attending clinician has assessed them to be obese - ideally but not necessarily with an objective measurement of obesity, such as calculation of the body mass index (BMI of 30 or more) or measurement of abdominal girth.

2.1.13 Diabetes with complications

This is defined as diabetes mellitus (type I or type II) with evidence of one or more organ or tissue damage due to diabetes mellitus, irrespective of the need for current treatment of diabetes. Examples of chronic complications include: diabetic cardiomyopathy; diabetic nephropathy; diabetic neuropathy; diabetic retinopathy; diabetic myonecrosis; peripheral vascular disease; coronary artery disease; stroke (other examples exist).

2.1.14 Rheumatologic disease

This is defined as an inflammatory and degenerative diseases of connective tissue structures. It includes chronic arthropathies and arthritis, connective tissue disorders and vasculitides.

2.1.15 Dementia

This is defined as:

- Evidence from the history and mental status examination that indicates major impairment in learning and memory *as well as at least one of the following*:
- Impairment in handling complex tasks
- Impairment in reasoning ability
- Impaired spatial ability and orientation
- Impaired language

The cognitive symptoms must significantly interfere with the individual's work performance, usual social activities, or relationships with other people. This must represent a significant decline from a previous level of functioning. The disturbances are of insidious onset and are progressive, based on evidence from the history or serial mental-status examinations. The disturbances are not occurring exclusively during the course of delirium. The disturbances are not better accounted for by a major psychiatric diagnosis. The disturbances are not better accounted for by a systemic disease or another brain disease. Chronic cognitive deficit is included.

2.2 Recurrent fever prior to admission

This may be patient-reported fever or a history of measured temperature >38°C (>100.4°F), with episodes occurring on more than one occasion before the patient was admitted with their episode of suspected or confirmed SARI infection. Place a cross (X) in the appropriate box ('yes', 'no' or 'N/A').

2.3 Malaria diagnosis after symptom onset

This refers to malaria that has been diagnosed by standard laboratory methods e.g. microscopic examination of a blood film or detection using an immunochromatographic (ICT) test. Place a cross (X) in the appropriate box ('yes', 'no' or 'N/A'). Both 'malignant' falciparum malaria and benign malaria (e.g. caused by P.ovale, P.vivax) may be recorded.

2.4 Treatment with immunosuppressants (including inhaled/oral corticosteroids) prior to admission

This refers to a patient who is known to have taken prescribed medications that are known to have an immunosuppressing effect. Examples include oral, intravenous or inhaled corticosteroids, chemotherapeutic agents and anti-transplant-rejection medications (other examples exist). Place a cross (X) in the appropriate box ('yes', 'no' or 'N/A').

If you answer 'yes', complete SECTION 2 ADMISSION IMMUNOSUPPRESSANT in the SUPPLEMENTARY TO CORE CRF.

Only record agents where the immunosuppressing effect is believed to remain active at the time of admission. Please use the Supplementary Data Form to record further immunosuppressants, if Necessary.

2.5 Treatment with anti-infectives (antibiotics and anti-virals) for this illness episode prior to admission.

This section refers to specific pharmaceutical interventions administered prior to admission to the clinical centre (hospital).

Antibiotics refer to any agent(s) prescribed specifically to treat a suspected or confirmed bacterial infection prior to hospital admission. Topical preparations are not included.

Antivirals refer to any agent(s) prescribed specifically to treat a suspected or confirmed viral infection. Examples of neuraminidase inhibitors include oseltamivir, ribavirin, acyclovir and lopinavir/ritonavir (note that other examples exist). Antivirals may have been given for the treatment of viral infections other than a SARI-causing infection. Topical preparations are not included.

If an **anti-infective** was administered at any point prior the patient's hospital admission, please complete by placing a cross (X) in the appropriate box ('yes', 'no' or 'N/A').

If you answer 'yes', complete SECTION 2 ADMISSION ANTI-INFECTIVES in the SUPPLEMENTARY TO CORE CRF.

2.6 Post-partum

This refers to a woman who has given birth by vaginal delivery or caesarean section during, immediately before, or immediately following her acute illness with a suspected/confirmed infection causing SARI. Place a cross (X) in the appropriate box ('yes', 'no' or 'N/A'). The post-partum period is defined as the 6 week period following birth.

If N/A skip this section and go to INFANT.

2.6.1 Pregnancy outcome

Place a cross (X) in the appropriate box, 'live birth' or 'still birth', corresponding to the outcome of delivery.

Live birth is defined as the complete expulsion or extraction from the mother of a baby, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of the voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

Stillbirth is defined as the delivery of a dead foetus ≥22 weeks gestational age determined by weeks of pregnancy at delivery, or gestational age at diagnosis of foetal death if known, or birth weight of 500 grams or more if foetal gestational age is not known.

2.6.2 Delivery date

For post-partum women, enter the date on which the baby was delivered, in day/month/year format (DD/MM/YYYY). For example, if the baby was born on 29th December 2012, enter '29/12/2012'. This applies to all modes of delivery and both live and still births.

2.6.3 Baby tested for Mother's infection

This refers to laboratory testing of a sample obtained from the baby for diagnosis of the SARI causing-infection identified/suspected in the mother. Place a cross (X) in the appropriate box ('yes', 'no', or 'N/A' if it is not known whether diagnostic testing was performed).

If ‘Yes’, means a test was performed and the result is known, place a cross in the appropriate box corresponding to the result (for example, ‘positive’ if the infection was detected, or ‘negative’ if the infection was not detected).

If testing was performed using Polymerase Chain Reaction (PCR), place a cross (X) in the corresponding box. If other test was used, place a cross in the box marker ‘other’ and write the name of the test used.

2.7 Infant – Less than 1 year old

If the patient is a child less than one year of age, please complete this subsection. Please a cross (X) in the appropriate box (‘yes’, or ‘no’).

If the answer is ‘no’, skip this section and go to Section 3 Signs and Symptoms at Hospital Admission.

2.7.1 Birth weight

If known, please enter the first weight of the infant obtained after birth in the space provided and place a (X) in the box unit of measurement used (‘kg’ if kilograms, or ‘lbs ’if pounds).

2.7.2 Gestational outcome

Place a cross (X) in the box corresponding to the **gestational age** at the time of delivery (term-birth (birth at greater than or equal to 37 weeks using best estimated due date) or preterm birth (birth when a fetus is less than 37 weeks and 0 days gestational age). If gestational age is not known, place a cross (X) in the box marked ‘N/A’.

2.7.3 Breastfed

If the infant was or continues to be **breastfed**, place a cross in the box marked ‘yes’; if not, place a cross in the box marked ‘no’. If unknown, place a cross in the box marked ‘N/A’.

2.7.4 If YES

If the **infant is being breastfed** at the time of completing the form, place a cross in the box marked ‘currently breastfed’. If breastfeeding has been **discontinued**, place a cross in the box marked ‘breastfeeding discontinued’ and enter the number of weeks of age when breastfeeding stopped. If breastfeeding status is not known, place a cross (X) in the box marked ‘N/A’.

2.7.5 Appropriate development for age

Based on locally-accepted clinical assessment standards, if the **infant’s development** is appropriate for age, place a cross (X) in the box marked ‘yes’. If development, based on clinical assessment standards, is considered not to be appropriate for their chronological age, place a cross in the box marked ‘no’. If the answer to this question is unknown, place a cross in the box marked ‘N/A’.

2.7.6 Vaccinations appropriate for age/country

If **vaccinations** have been administered according to the recommended schedule within the country where the infant resides, place a cross (X) in the box marked ‘yes’. If not, place a cross in the box marked ‘no’. If vaccination history is not known, place a cross in the box marked ‘N/A’.

2.8 Other relevant risk factor(s):

Please document in the space provided any other clinical risk factors or comorbidities that are considered relevant to the patient's current condition. If additional space is required, please use an additional sheet in the CORE ADDITIONAL INFORMATION in the SUPPLEMANTARY TO CORE CRF.

Section 3: SIGNS AND SYMPTOMS AT ADMISSION

This section refers to the point at which the patient was admitted to the clinical centre (hospital) with a suspected or confirmed infection causing SARI, reflecting clinical assessments that are typically conducted and recorded in the emergency room and/or the ward or acute medical unit to which the patient was admitted on arrival to hospital.

3.1 Symptom onset date:

The date on which the symptoms associated with the patient's current presentation of confirmed or suspected SARI-causing infection began or were first noted. Please avoid including symptoms that are chronic and/or only related to an underlying condition, unless the suspected/confirmed SARI illness began with worsening of chronic symptoms (where this is the case, enter the date when the worsening of chronic symptoms began). If there are multiple symptoms, enter the date of the earliest symptom. For example, if the patient reported fever followed by cough and shortness of breath, enter the date the fever started. If the patient reported sore throat followed by cough and then fever, enter the date the sore throat started.

3.2 Temperature

Please enter the peripheral body temperature (rectal if < 3 months) in the space provided and circle the appropriate unit of measurement, either degrees Centigrade/Celsius (°C) or degrees Fahrenheit (°F). If not measured, enter 'NA'.

3.2 Heart rate (HR)

Enter the heart rate measured in beats per minute. This may be measured manually or by electronic monitoring. It is not necessary to document the method used, nor does it matter if the method is not known. If not measured, enter 'NA'.

3.5 Respiratory rate (RR)

Enter the respiratory rate in breaths per minute. Manual rather than electronic measurement is preferred where possible (this is achieved by counting the number of breaths for one minute, counting how many times the chest rises within this time period). If the method of determination is not known, please enter the rate that has been documented in the notes. If not measured, enter 'NA'.

3.6 Systolic BP

Please enter the systolic blood pressure measured in millimetres of mercury (mmHg), in the relevant sections. For example, if the blood pressure is 120/85 mmHg, enter 120 in the section marked 'systolic BP'. The method used to take the measurements is not important. Please do not enter mean arterial blood pressure in either section. If not measured, enter 'NA'.

3.7 Diastolic BP

Please enter the diastolic blood pressure measured in millimetres of mercury (mmHg), in the relevant sections. For example, if the blood pressure is 120/85 mmHg, enter 85 in the section marked 'diastolic BP'. The method used to take the measurements is not important. Please do not enter mean arterial blood pressure in either section. If not measured, enter 'NA'.

3.8 Severe dehydration?

Place a cross (X) in the appropriate box ('yes', 'no' or 'N/A'). Severe dehydration occurs following inappropriate loss of 10-15% of body fluids. It can cause the following signs and symptoms: extreme thirst; irritability and confusion; very dry mouth, dry skin and mucous membranes; lack of sweating; little or no urination - any urine that is produced will be dark yellow or amber; sunken eyes; shrivelled and dry skin that lacks elasticity and doesn't 'bounce back' when pinched into a fold; low blood pressure; rapid heartbeat; rapid breathing; fever; delirium or unconsciousness.

3.9 Sternal capillary refill time > 2 seconds?

Sternal capillary refill time is measured by pressing on the sternum for five seconds with a finger or thumb until the underlying skin turns white and then noting the time in seconds needed for the colour to return once the pressure is released. If the time taken for colour to return to normal is greater than 2 seconds, place a cross (X) in the box marked 'yes'. If the time taken for the colour to return to normal is less than 2 seconds, place a cross in the box marked 'no'. If sternal capillary refill time is not measured or not known, place a cross in the box marked 'N/A'.

3.10 Oxygen saturation

For all patients, irrespective of ventilation or supplemental oxygen requirement, please enter the percentage oxygen saturation (the percentage of haemoglobin binding sites in the bloodstream occupied by oxygen) at the time of admission. This may be measured by pulse oximetry or by arterial blood gas analysis. If not measured, enter 'NA'.

If oxygen saturation is known, please go on to answer whether it was measured without supplemental oxygen in place e.g. measured on room air, or whether it was measured with oxygen therapy by placing a cross (X) in the appropriate box ('yes', 'no' or 'N/A').

3.11 Admission signs and symptoms (observed/reported at admission and associated with this episode of acute illness)

This section only concerns signs and symptoms associated with the episode of acute illness, as reported and assessed at the time of admission to the clinical centre (hospital). For each sign/symptom listed, please place a cross (X) in the appropriate box ('yes', 'no' or 'N/A'). Please ensure that a response is given for every symptom/sign. Clarification of selected terms is provided below.

> **Shortness of breath** (Dyspnoea) is defined as a feeling of difficult or laboured breathing that is out of proportion to the patient's level of physical activity.
>
> In children, Rapid breathing, slow breathing for age, and/or apnoea (> 20 sec or < 20 sec with pallor, cyanosis)

Lower chest wall in-drawing is defined as when the lower chest wall goes in when the patient breathes in; if only the soft tissue between the ribs or above the clavicle goes in when the patient breathes, this is not lower chest wall in-drawing.

Diarrhoea is defined as three or more loose or liquid bowel movements per day.

If **bleeding** (Haemorrhage) is present and considered to be abnormal, please specify the site of bleeding in the space provided.

Section 4: COMPLICATIONS (at any time during hospitalisation)

This section refers to any complication that occurred at any time during the patient's hospital stay with confirmed or suspected SARI-causing infection. For each complication listed, please place a cross (X) in the appropriate box ('yes', 'no' or 'N/A'). Please ensure that a response is given for every complication listed on the form.

4.1 Viral pneumonitis

Is defined as pneumonitis (pneumonia) that is believed to occur as a direct consequence of an infecting virus/infecting viruses. Viral pneumonitis may be a clinical diagnosis, with or without radiographic or histopathological evidence of lung consolidation. Although preferred, identification of the infecting viral species is not essential to make the diagnosis.

4.2 Bacterial pneumonia

Is defined as pneumonia (pneumonitis) that is believed to occur as a direct consequence of infecting bacteria. It is an acute infection of the lung parenchyma caused by bacteria (e.g., Streptococcus pneumoniae, Haemophilus influenzae, Chlamydia pneumoniae, Mycoplasma pneumoniae, and Legionella pneumophila). Signs and symptoms include productive cough, fever, chills, shortness of breath, and chest pain. Bacterial pneumonia may be a clinical diagnosis, with or without radiographic or histopathological evidence of lung consolidation. Although preferred, identification of the infecting bacterial species is not essential to make the diagnosis.

4.3 Acute lung injury (ALI) / Acute Respiratory Distress Syndrome (ARDS) Are defined according to the 2012 Berlin definition (please note that the Berlin definition removes the term acute lung injury from classification, instead referring to ARDS of variable severity):

- Respiratory symptoms must have begun within one week of a known clinical insult, or the patient must have new or worsening symptoms during the past week.
- Bilateral opacities consistent with pulmonary oedema must be present on a chest radiograph or computed tomographic (CT) scan. These opacities must not be fully explained by pleural effusions, lobar collapse, lung collapse, or pulmonary nodules.
- The patient's respiratory failure must not be fully explained by cardiac failure or fluid overload. An objective assessment (eg, echocardiograp hy) to exclude hydrostatic pulmonary oedema is required if no risk factors for ARDS are present.
- A moderate to severe impairment of oxygenation must be present, as defined by the ratio of arterial oxygen tension to fraction of inspired oxygen (PaO2/FiO2). The severity of the hypoxaemia defines the severity of the ARDS:
- The severity of the hypoxaemia defines the severity of the ARDS:

- Mild ARDS: The PaO2/FiO2 is >200 mmHg, but ≤300 mmHg, on ventilator settings that include positive end-expiratory pressure (PEEP) or continuous positive airway pressure (CPAP) ≥5 cm H2O.
- Moderate ARDS: The PaO2/FiO2 is >100 mmHg, but ≤200 mmHg, on ventilator settings that include PEEP ≥5 cm H2O.
- Severe ARDS: The PaO2/FiO2 is ≤100 mmHg on ventilators setting that include PEEP ≥5 cm H2O.

To determine the PaO_2/FiO_2 ratio, the PaO_2 is measured in mmHg and the FiO_2 is expressed as a decimal between 0.21 and 1. As an example, if a patient has a PaO_2 of 60 mmHg while receiving 60% oxygen, then the PaO_2/FiO_2 is 60/0.6 = 100 mmHg.

To convert kPa to mmHg please multiply kPa by 7.5. As an example, if a patient has a kPa of 11, 11 X 7.5 = 82.5 mmHg.

4.4 Pneumothorax

Is defined as the abnormal presence of air in the pleural cavity (between the lungs and the chest wall), causing collapse of the lung. It may be diagnosed clinically, usually with radiological confirmation.

4.5 Pleural effusion

Is defined as increased amounts of fluid within the pleural cavity. Symptoms include shortness of breath, cough, and chest pain. It is usually caused by lung infections, congestive heart failure, pleural and lung tumours, connective tissue disorders, and trauma. It may be diagnosed clinically, with or without radiological or interventional confirmation.

4.6 Bronchiolitis

In adults, is a general term used to describe a nonspecific Inflammation of the bronchioles characterized by swelling of the bronchioles and mucus accumulation. It is usually caused by the respiratory syncytial virus and affects children. Signs and symptoms include coughing, wheezing, and shortness of breath. In the majority of cases, open or thoracoscopic lung biopsy is required to make a definitive diagnosis, although tissue confirmation may not be necessary in patients with a clear predisposition and typical radiological findings.

In *infants and children*, bronchiolitis is defined as an illness in children <2 years of age, characterized by wheezing and airway obstruction due to primary infection or reinfection with a viral or bacterial pathogen, resulting in inflammation of the small airways/bronchioles.

4.7 Meningitis / Encephalitis

A disorder characterized by acute inflammation of the meninges of the brain and/or spinal cord. / An acute inflammatory process affecting the brain parenchyma. Causes include viral infections and less frequently bacterial infections, toxins, and immune-mediated processes.

Meningitis is an inflammatory disease of the leptomeninges, the tissues surrounding the brain and spinal cord, and is defined by an abnormal number of white blood cells in the cerebrospinal fluid (CSF) within an appropriate clinical context and with or without supportive radiological findings.

Encephalitis refers to inflammation of the brain. In comparison with meningitis, in encephalitis, abnormalities in brain function are expected, including altered mental status, motor or sensory deficits, altered behaviour and personality changes, and speech or movement disorders.

4.8 Seizure

Is defined as sudden, involuntary skeletal muscular contractions of cerebral or brain stem origin. An established history of epilepsy is not required.

4.9 Stroke / Cerebrovascular accident

Is defined as a sudden loss of neurological function secondary to haemorrhage or ischemia in the brain parenchyma due to a vascular event. Stroke may be a clinical diagnosis, with or without supportive radiological findings.

4.10 Congestive heart failure

Is defined as failure of the heart to pump a sufficient amount of blood to meet the needs of the body tissues, resulting in tissue congestion and oedema. Signs and symptoms include shortness of breath, pitting oedema, enlarged tender liver, engorged neck veins, and pulmonary rales. There are many ways to assess cardiac function. However, there is no diagnostic test for heart failure, since it is largely a clinical diagnosis that is based upon a careful history and physical examination.

4.11 Endocarditis / Myocarditis / Pericarditis

This refers to the inflammation of the endocardium (endocarditis)/ inflammation of the muscle tissue of the heart (myocarditis) / an inflammatory process affecting the pericardium (pericarditis). It may be diagnosed clinically, with assistance from an echocardiogram, EKG, or laboratory tests. It is accepted that inflammation may occur in response to infection; evidence of tissue damage secondary to invasion by a pathogen e.g. identification of the pathogen in affected tissue, is not required.

4.12 Cardiac arrhythmia

Refers to any variation from the normal rate or rhythm (which may include the origin of the impulse and/or its subsequent propagation) in the heart, confirmed by electrocardiographic monitoring.

4.13 Cardiac ischaemia

Is defined as diminished blood and oxygen supply to the heart muscle as indicated by typical symptomatology (e.g. chest pain) and confirmed by an electrocardiogram (showing ischaemic changes, e.g. ST depression or elevation) and/or cardiac enzyme elevation (e.g. raised troponin I)

4.14 Cardiac arrest

Cardiopulmonary arrest or circulatory arrest is defined as the sudden cessation of cardiac activity in an individual who becomes unresponsive, without normal breathing and no signs of circulation. Cardiac arrest may be reversed by CPR, and/or defibrillation, cardioversion or cardiac pacing.

4.15 Bacteraemia

Is defined as the presence of bacteria in blood, most often detected through blood culture investigation. Episodes of suspected artifactual contamination of a blood culture should not be recorded.

4.16 Coagulation disorder / Disseminated Intravascular Coagulation

Coagulopathy (bleeding disorder) is defined as a condition in which there is a deviation from or interruption of the normal coagulation properties of the blood (normal blood clotting is disrupted). Coagulopathy may be caused by problems with blood clotting/coagulation factors (low or missing factors, or functional defects of factors) and functional or quantitative defects in the cells contributing towards clotting e.g. platelets.

Disseminated intravascular coagulation (DIC; consumption coagulopathy; defibrination syndrome) is defined as a pathological process where the blood starts to coagulate throughout the whole body. This depletes the body of its platelets and coagulation factors, and there is an increased risk of haemorrhage systemic process producing both thrombosis and haemorrhage and can be acute or chronic. Diagnosis is suggested by the history, the clinical presentation, moderate to severe thrombocytopaemia (<100,000 platelets per microliter) and the presence of microangiopathic changes on the blood film. Acute DIC is confirmed by demonstrating increased thrombin generation (e.g. decreased fibrinogen) and increased fibrinolysis (e.g. elevated fibrin degredation products and D-dimer). The diagnosis of chronic DIC may be largely based upon evidence of microangiopathy on the blood film and increased levels of fibrin degredation products and particularly D-dimer.

4.17 Anaemia

Is defined as a reduction in the number of red blood cells, the amount of haemoglobin, and/or the volume of packed red blood cells. Clinically, anaemia represents a reduction in the oxygen-transporting capacity of a designated volume of blood, resulting from an imbalance between blood loss (through haemorrhage or haemolysis) and blood production. Signs and symptoms of anaemia may include pallor of the skin and mucous membranes, shortness of breath, palpitations of the heart, soft systolic murmurs, lethargy, and fatigability. World Health Organization thresholds for defining anaemia are outlined below:

Age or gender group	Hb threshold (g/dl)	Hb threshold (mmol/l)
Children (0.5–5.0 yrs)	11.0	6.8
Children (5–12 yrs)	11.5	7.1
Teens (12–15 yrs)	12.0	7.4
Women, non-pregnant (>15yrs)	12.0	7.4
Women, pregnant	11.0	6.8
Men (>15yrs)	13.0	8.1
		(1 g/dL = 0.6206 mmol/L)

4.18 Rhabdomyolysis / Myositis

Rhabdomyolysis is a syndrome characterised by muscle necrosis and the release of myoglobin into the blood, resulting from muscle injury. Diagnosis is made in a patient with either an acute

neuromuscular illness or dark urine without other symptoms, plus a marked acute elevation in creatine kinase. The creatine kinase is typically at least five times the upper limit of normal (there is no diagnostic threshold to establish the diagnosis, however). Muscle biopsy, electromyography, radiological imaging and the presence of myoglobinuria are not required for the diagnosis.

Myositis is defined as an inflammatory process affecting the skeletal muscles. Causes include infections, injuries, and autoimmune disorders. It may be a clinical diagnosis with supporting evidence from laboratory tests e.g. elevated serum creatine kinase; histological confirmation is not required to make the diagnosis. Myositis can occur without subsequent progression to rhabdomyolysis.

4.19 Acute renal injury/Acute renal failure

Acute kidney injury is defined when one of the following criteria is met:

- serum creatinine rises by ≥26µmol/L or 0.3mg/dL within 48 hours or
- serum creatinine rises ≥1.5 fold from the reference value, which is known or
- presumed to have occurred within one week or
- urine output is <0.5ml/kg/hr for >6 consecutive hours

*****The reference serum creatinine should be the lowest creatinine value recorded within 3 months of the event.

*If a reference serum creatinine value is not available within 3 months and acute renal injury/failure is suspected, then repeat the serum creatinine measurement within 24 hours or a reference serum creatinine value can be estimated from the nadir serum creatinine value if the patient recovers from the acute renal injury/failure

4.20 Gastrointestinal haemorrhage

Refers to bleeding originating from any part of the gastrointestinal tract (from the oropharynx to the rectum). Clinically significant is defined as an episode that has affected, or has the potential to affect, the health of the patient.

4.21 Pancreatitis

Refers to inflammation of the pancreas (e.g. Pancreatitis/ acute inflammation of the pancreas). Acute pancreatitis is diagnosed clinically with supporting biochemical (e.g serum amylase or serum lipase) and/or radiological and/or histological evidence. All evidence should be considered together, since no single feature is diagnostic of acute pancreatitis.

4.22 Liver dysfunction

A finding that indicates abnormal liver function, may refer to any of the following:

- Clinical jaundice
- Hyperbilirubinaemia (blood bilirubin level twice the upper limit of the normal range)
- An increase in ALT (SGPT) and/or AST (SGOT) that is twice the upper limit of the normal range
- Acute liver failure, defined as the *rapid development of severe acute liver injury with impaired synthetic function (based on laboratory tests) and encephalopathy in a person who previously had a normal liver or had well-compensated liver disease.

*rapid development is defined as the appearance of encephalopathy within eight weeks of the onset of symptoms in a patient with a previously healthy liver, or the appearance of encephalopathy within two weeks of developing jaundice, even in a patient with previous underlying liver dysfunction

4.23 Hyperglycaemia

For adults, is defined as an abnormally high level of glucose in the blood, blood glucose level that is consistently above 126mg/dL or 7 mmol/L. For children, is defined as a blood glucose level consistently above 8.3 mmol/L.

4.24 Hypoglycaemia

For adults, is defined as an abnormally low level of glucose in the blood, a blood glucose level that is consistently below 70mg/dL or 4 mmol/L. For children, is defined as a blood glucose level below 3 mmol/L.

4.25 Other

Please specify other complications in the space provided. If there is more than one additional complication, please use the Supplementary Data Form (Core-Additional Information).

Section 5: PATHOGEN TESTING

5.1 Was pathogen testing done during this illness episode?

This refers to laboratory assays used to detect SARI-causing pathogens or for infections other than the SARI-causing pathogens of interest during the patient's hospital stay with suspected/confirmed SARI-causing infection. Detection by polymerase chain reaction (PCR) testing is a commonly used method. Rapid antigen and serological testing (to detect antibodies against the pathogen) may also be employed.

If pathogen testing was performed at any time during the patient's hospital stay with suspected or confirmed SARI-causing infection, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If it is not known whether pathogen testing was performed, place a cross in the box marked 'N/A'. More space available in the SUPPLEMENTARY TO CORE CRF.

5.2 Details of pathogen testing per sample type

If the patient did undergo pathogen detection testing for SARI-causing infection or for infections other than the SARI-causing pathogens of interest during the patient's hospital stay with suspected/confirmed SARI-causing infection, please complete every row of the table. Each row corresponds to a different sample type, for each type:

In the first column please state the Biospecimen (sample) **collection date** (in day/month/year format DD/MM/YYYY). If 'other' sample type is selected, please indicate the type of sample. In the second column indicate the '**Biospecimen Type'**.

In the third column ('**laboratory test method'**), place a cross in the box marked 'PCR' if polymerase chain reaction was used, or culture; otherwise, place a cross in the box marked 'other' and write in the method of testing. If the method is not known, write 'N/A '.

In the fourth column, please document the **result** of the biospecimen, whether the named pathogen was detected (positive) in that sample type or was not detected (negative), by placing a cross (X) in the appropriate box ('positive' or 'negative'). For each sample type, if testing was not performed or the result is unknown, place a cross in the box marked 'N/A'.

In the fifth column ('**pathogen tested/detected**'), please state the name of the pathogen that the test was trying to detect.

Where both positive and negative results for a particular sample type exist (from samples taken at different time points during the patient's hospital stay) please record the earliest positive result.

If only multiple negative results exist for a particular sample type (from samples taken at different time points during the patient's hospital stay), please document the earliest negative result.

If further space is required, please use the SUPPLEMENTARY TO CORE CRF.

Section 6: TREATMENT, at any time during hospitalisation, did the patient receive/undergo

This section refers to specific levels of care or specific interventions that the patient may have received during their hospital stay with suspected or confirmed SARI-causing infection.

Please provide a response to every question.

6.1 Intensive Care Unit (ICU) or High Dependency Unit (HDU) Admission?

Place a cross (X) in the appropriate box: yes, (if admitted) or no (if this is not the case).

If the answer is YES, please indicate the date on which the patient was first admitted to the intensive care unit / High Dependence Unit (ICU/HDU) with the format day/month/year (DD/MM/YYYY) and fill in all parts as requested in this section.

Date of most recent discharge from ICU/ HDU in format day/month/year. This section may need to be revised if the patient has more than one ICU/HDU admission during a single hospital admission.

Please enter the total number of days the patient was admitted to the ICU/HDU, this should include all ICU/HDU admissions if there were more than one. Count any day in which the patient was in ICU/HDU during that 24 hour period (please note this number could be significantly shorter than indicated by the two dates indicated in the first and last day field if the patient was discharged to another ward/unit and readmitted to the ICU/HDU during their hospital stay).

6.2 Oxygen therapy

If oxygen (at any concentration >21%) was given by any means of delivery at any point during the patient's hospital stay, place a cross in the box marked 'yes'. Oxygen can be delivered by invasive or non-invasive mechanical ventilation, and supplemental oxygenation (O_2) via facemask/nasal prongs/hood. If the patient received oxygen therapy at any time during the admission period, place a cross (X) in the box marked 'no'. If the answer is not known, place a cross (X) in the box marked 'N/A'.

If the patient did receive oxygen, enter the number of days that the patient received oxygen, in the adjacent section. One day is defined as any day when the patient received oxygen for any period of time within that 24 hour period. Oxygen does not have to have been given over consecutive days to be recorded. If the number of days is not known, enter 'NA'.

If yes, enter the first day and last day of administration of oxygen in the format of day/month/year, if unknown place a cross (X) the box marked 'N/A'.

6.3 **Non-invasive ventilation** (eg. BIPAP, CPAP)

If the patient received non-invasive ventilation (NIV), defined as the provision of ventilatory support through the patient's upper airway using a mask or similar device, at any time during their hospital stay, place a cross (X) in the box marked 'yes'. If they did not, place a cross in the box marked 'no'. If the answer is not known, place a cross the box marked 'N/A'.

If the patient did receive NIV, please enter the number of days that NIV was administered, in the adjacent section. One day is defined as any day when the patient received NIV for any period of time within that 24 hour period. NIV does not have to have been given over consecutive days to be recorded. If the number of days is not known, enter 'NA'.

Please note that BiPAP and CPAP ventilation modes are not unique to NIV; they can also be given via invasive mechanical ventilation, so please check.

6.4 **Invasive ventilation** (Any)

Invasive ventilation means that patient has undergone tracheal intubation, for the purpose of invasive mechanical ventilation. Invasive ventilation is a method to mechanically assist or replace spontaneous breathing in patients by use of a powered device that forces oxygenated air into the lungs. The mode of intubation may be orotracheal, nasotracheal, or via a cricothyrotomy or tracheotomy. If invasive ventilation was used at any time during the patient's hospital admission for SARI, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

If the patient did receive invasive ventilation, please enter the number of days that it was administered, in the adjacent section. One day is defined as any day when the patient received invasive ventilation for any period of time within that 24 hour period. Invasive ventilation does not have to have been given over consecutive days to be recorded. If the number of days is not known, enter 'NA'.

If yes, enter the first day and last day of invasive mechanical ventilation in the format or day/month/year, if unknown place across (X) the box marked 'N/A'.

6.4.1 Oscillatory Ventilation

This refers to high frequency oscillatory ventilation (HFOV). If the patient received HFOV at any time during their hospital stay, place a cross (X) in the box marked 'yes'. If they did not, place a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

If the patient did receive HFOV, please enter the number of days that HFOV was administered, in the adjacent section. One day is defined as any day when the patient received HFOV for any period of time within that 24 hour period. HFOV does not have to have been given over consecutive days to be recorded. If the number of days is not known, enter 'NA'.

6.4.2 Prone Ventilation

Prone ventilation refers to mechanical ventilation with the patient lying in the prone position. If the patient received prone ventilation at any time during their hospital stay, place a cross (X) in the box marked 'yes'. If they did not, place a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

If the patient did receive prone ventilation, please enter the number of days that was administered, in the adjacent section. One day is defined as any day when the patient received it for any period of time within that 24 hour period. Prone ventilation does not have to have been given over consecutive days to be recorded. If the number of days is not known, enter 'NA'.

6.4.3 Inhaled Nitric Oxide

If the patient received inhaled nitric oxide at any time during their hospital stay, place a cross (X) in the box marked 'yes'. If they did not, place a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

If the patient did receive inhaled nitric oxide, please enter the number of days that it was administered, in the adjacent section. One day is defined as any day when the patient received it for any period of time within that 24 hour period. Inhaled Nitric Oxide does not have to have been given over consecutive days to be recorded. If the number of days is not known, enter 'NA'.

6.5 Extracorporeal membrane oxygenation (ECMO) or interventional lung-assist therapy (iLA)

Extracorporeal membrane oxygenation (ECMO) is an extracorporeal technique of providing cardiac and respiratory support to a patient, with the ability to oxygenate and remove carbon dioxide from blood. **Interventional lung-assist (iLA) therapy** is typically a pump-less method capable of improving extracorporeal gas exchange with a membrane that is integrated in a passive arteriovenous shunt. An example device is the Novalung® iLA membrane ventilator.

If the patient received ECMO at any time during their hospital stay, place a cross (X) in the box marked 'ECMO'. If the patient received iLA therapy at any time during their hospital stay, place a cross in the box marked 'iLA'.

If the patient did not receive either of these therapies, place a cross in the box marked 'none'. If it is not known whether the patient received either of these therapies, place a cross in the box marked 'N/A'. If the patient did not receive either of these therapies because facilities are not available on site, place a cross in the box marked 'not available at site'.

If yes, the patient received either ECMO or iLA, please state the duration (in days) in the adjacent space. If therapy was given on non-consecutive days, add each day that the therapy was given and enter the total. One day is defined as ECMO or iLA having been administered for any period of time during that 24 hour period. If the duration is not known, enter 'NA'.

If yes, enter the first/ start date and last/ end date of either ECMO or iLA in the format or day/month/year, if unknown place across (X) the box marked 'N/A'.

6.6 Renal replacement therapy (RRT) or dialysis

Renal replacement therapy includes haemodialysis, peritoneal dialysis (PD), intermittent haemodialysis (IHD), on-line intermittent haemofiltration (IHF), on-line haemodiafiltration (IHDF),

continuous haemofiltration (CHF) and continuous haemodiafiltration (CHDF), continuous venovenous haemofiltration (CVVH), continuous venovenous haemodialysis (CVVHD), continuous venovenous haemodiafiltration (CVVHDF), slow continuous ultrafiltration (SCUF), continuous arteriovenous haemofiltration (CAVHD) and sustained low-efficiency dialysis (SLED).

If the patient received RRT or dialysis during their hospital stay, place a cross (X) in the box marked 'yes'. Please also enter the duration of RRT or dialysis (in days) in the space provided. One day is defined as a day where RRT or dialysis was used at any point during that 24 hour period. If RRT or dialysis was given intermittently during the patient's hospital stay, add the days and enter the total. If the duration is not known, enter 'NA'

If the patient did not receive any RRT or dialysis, place a cross in the box marked 'no'. If it is not known whether they received RRT or dialysis, place a cross in the box marked 'N/A'.

If yes, enter the first/ start date and last/ end date of either RRT or dialysis in the format or day/month/year, if unknown place across (X) the box marked 'N/A'.

6.7 Inotropes/vasopressors?

A **vasopressor** is a pharmaceutical agent that causes vasoconstriction, thereby increasing blood pressure. Agents include norepinephrine, epinephrine, vasopressin, terlipressin and phenylephrine. Some inotropes also demonstrate vasopressor activity.

An **inotrope** is a pharmaceutical agent that alters the force of myocardial contractility. Commonly used 'positive' inotropes include dobutamine, dopamine, milrinone and adrenaline (epinephrine)

If the patient received a vasopressor or inotrope for at least one hour during their hospital stay, place a cross (X) in the box marked 'yes' in one of the following three options. If they did not, place a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'. If yes, please also enter the duration of receiving an inotrope or vasopressor (in days) in the space provided.

If yes, enter the first/ start date and last/ end date of receiving an inotrope or vasopressor in the format or day/month/year, if unknown place across (X) the box marked 'N/A'.

6.8 Plasmapheresis/exchange?

Plasmapheresis (plasma exchange) refers to the extracorporeal separation of blood components, resulting in a filtered product. Methods include discontinuous flow centrifugation, continuous flow centrifugation and plasma filtration. If the patient received plasmapheresis during at any time during their hospital stay, place a cross (X) in the box marked 'yes'. If they did not, enter a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

6.9 Oral rehydration therapy only?

If the patient did *not* receive supplemental fluids (colloid solutions and crystalloid solutions) via intravenous or intraosseous replacement method at any time during their hospital stay, place a cross (X) in the box marked 'yes'. If they did receive fluid intravenous or intraosseous fluid replacement, place a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

6.10 Intravenous immunoglobulin?

Examples of commercial intravenous immunoglobulin IVIG preparations include Octagam®, Intragam P®, KIOVIG®, Flebogamma 5% DIF®, Carimune NF®, Gamunex®, Gammagard S/D®, Gammagard Liquid®, Gammaked® and Privigen®. If the patient received intravenous immunoglobulin (IVIG, human normal immunoglobulin for intravenous administration) at any time during their hospital stay, place a cross (X) in the box marked 'yes'. If they did not, enter a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

6.11 Blood transfusion or products ?

If the patient received a transfusion of blood (whole blood or packed red blood cells) or other blood products excluding human normal immunoglobulin (e.g. albumin, granulocytes, platelets, fresh-frozen plasma (FFP), FP24, PF-24, cryoprecipitate, protein C concentrate, cryosupernatant, or a specific non-recombinant clotting factor) at any time during their hospital stay, place a cross in the box marked 'yes'. If they did not, place a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

6.12 OTHER intervention or Procedure (please specify)

Please mention here any other specific therapeutic intervention or procedure not otherwise categorised that you believe may be relevant. Please provide as much detail as possible, including duration of therapy, where appropriate. If more space is required, please use additional sheets in the SUPPLEMENTARY TO CORE CRF.

Section 7: MEDICATION - While hospitalised or at discharge, were any of the following administered?

This section refers to specific pharmaceutical interventions administered while the patient was in the emergency department, while in hospitalisation and at discharge. Please provide a response for all agents listed.

If any of the anti-infectives or corticosteroids listed below (antivirals, antibiotics, corticosteroids, antifungals) were administered, please also complete the CORE SECTION 9 - MEDICATION: ANTI-INVECTIVES AND CORTICOSTEROIDS in the SUPPLEMENTARY DATA FORM

7.1 Antiviral Agent

'Antiviral Agent' refers to any agent(s) prescribed to treat or prevent viral infections by interfering with the viral replication cycle. Examples of neuraminidase inhibitors include oseltamivir, ribavirin, acyclovir and lopinavir/ritonavir (note that other examples exist). Antivirals may have been given for the treatment of viral infections other than a SARI-causing infection. Topical preparations are not included.

If an antiviral was administered at any point during the patient's hospital stay with suspected or confirmed SARI-causing infection, or was prescribed at the time of discharge, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If the answer is unknown, place a cross in the box marked 'N/A'.

If yes, and the patient received neuraminidase inhibitors at any time during their hospital stay, place a cross in the box marked 'yes'. If the patient received other inhibitor, place a cross in the box marked 'other'.

7.2 Antibiotic

'Antibiotic' refers to any agent(s) are substances naturally produced by microorganisms or their derivatives that selectively target microorganisms not humans. Antibiotics kill or inhibit the growth of microorganisms by targeting components of the microbial cell absent from human cells, including bacterial cell walls, cell membrane, and 30S or 50S ribosomal subunits. These substances are used in the treatment of bacterial and other microbial infections. Topical preparations are not included.

If an antibiotic was administered at any point during the patient's hospital stay with suspected or confirmed SARI-causing infection, or was prescribed at the time of discharge, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If the answer is unknown, place a cross in the box marked 'N/A'.

7.3 Corticosteroid

'Corticosteroids' (commonly referred to as 'steroids') refers to all types of therapeutic corticosteroid, made in the adrenal cortex (the outer part of the adrenal gland). They are also made in the laboratory. Corticosteroids have many different effects in the body, and are used to treat many different conditions. They may be used as hormone replacement, to suppress the immune system, and to treat some side effects of cancer and its treatment. Corticosteroids are also used to treat certain lymphomas and lymphoid leukaemias. Examples include: prednisolone, prednisone, methyl-prednisolone, dexamethasone, hydrocortisone, fluticasone, betametasone (note that other examples exist). Topical preparations are not included, but inhaled preparations are included. The indication for administering corticosteroids is not important and does not need to be directly related to the treatment of illness arising from SARI-causing infection.

If a corticosteroid was administered at any point during the patient's hospital stay with suspected or confirmed SARI-causing infection, or was prescribed at the time of discharge from the hospital, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If the answer is unknown, place a cross in the box marked 'N/A'.

7.4 Antifungal Agent

'Antifungal agent' refers to any agent(s) prescribed specifically to treat systemic or topical infections caused by fungi. Antifungal agents kill or inhibit the growth. Examples include fluconazole, amphotericin, caspofungin, anidulafungin, posaconazole, itraconazole (note that other examples exist). Topical preparations should not be recorded.

If an antifungal was administered at any point during the patient's hospital stay with suspected or confirmed SARI-causing infection, or was prescribed at the time of discharge, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If the answer is unknown, place a cross in the box marked 'N/A'.

7.5 Angiotensin converting enzyme-inhibitors (ACE-Is) or angiotensin receptor blockers (ARBs)?

'Angiotensin converting enzyme-inhibitors' (ACE-Is or ACE-inhibitors) include the following medications: captopril, zofenopril, enalapril, ramipril, quinapril, perindopril, lisinopril, benazepril, imidapril, trandolapril and fosinopril.

'Angiotensin receptor-blockers' (ARBs or angiotensin II receptor antagonists) includes the following medications: losartan, candesartan, valsartan, irbesartan, telmisartan, eprosartan, olmesartan and azilsartan.

If either of these types of agent was administered during the patient's hospital stay with suspected or confirmed SARI-causing infection, or was prescribed at the time of discharge, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

7.6 Statins (HMG-CoA reductase inhibitor)

'Statins' (HMG-CoA reductase inhibitors) inhibits HMG-CoA reductase, a key enzyme in cholesterol synthesis acts to lower plasma cholesterol and lipoprotein levels. Statins include the following medications: atorvastatin, cerivastatin, fluvastatin, lovastatin, mevastatin, pitavastatin, pravastatin, rosuvastatin and imvastatin. Combination preparations (statin combined with a second class of agent) may also be prescribed.

If statins were administered during the patient's hospital stay with suspected or confirmed SARI-causing infection, or were prescribed at the time of discharge, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

If the patient was receiving statins, please also indicate whether the patient was **taking statins prior to admission** to the clinical centre (hospital) with suspected or confirmed SARI infection, by placing a cross in the appropriate box ('yes', 'no' or 'N/A').

Section 8: OUTCOME

This section refers to the outcome of the patient's illness due to suspected or confirmed SARI infection, censored at 60 days after hospital admission. This section may need to be completed at the time of hospital discharge of soon after, place a cross in one of the boxes that clearly indicates the known outcome of this patient, there are five choices. If the answer is not known, place a cross in the box marked 'N/A':

8.1 Outcome. Place a cross in one of the boxes that clearly indicates the known outcome of this patient, there are five choices. If the answer is not known, place a cross in the box marked 'unknown':

8.1.1 Alive at Discharge If, at the time the outcome section is completed, the patient is known to have been alive when discharged from the clinical or medical facility, place a cross (X) in the box.

8.1.2 Hospitalisation If the patient remains admitted as an inpatient at the clinical centre (hospital) at the time the outcome section is completed, then place a cross (X) in this box'.

8.1.3 Transfer to other facility If the patient was transferred (moved) from the current centre or medical facility to another medical facility, please place a cross (X) in this box. If the patient was transferred to another facility please complete the questions described in 9.3 below

8.1.4 Death (Deceased) If the patient is known to have died in the clinical centre or medical facility during their hospital stay with confirmed or suspected SARI-causing infection, please place a cross (X) in this box**.**

8.1.5 Palliative discharge If the patient is known to have had palliative discharge (e.g. discharged from hospital with the expectation that they will die imminently and require palliative care only), please place a cross in this box'.

8.1.6 N/A If the answer is not known to any of the above options, place a cross in the box marked 'N/A'. **8.1.6 Outcome date**

Date on which the final outcome occurred in format day/month/year. If specific day or month unknown enter NA in these fields.

8.2 If Discharged alive. Please complete this section if the patient was discharged alive (including palliative discharges)

8.2.1 Ability to self-care at discharge versus prior to illness

If discharged alive, and the patient is able to care for themselves at discharge (in terms of activities of daily living) at the same level as before they developed illness due to suspected or confirmed SARI infection, then place a cross in the box marked 'same as prior to illness'. If their ability to self-care has decreased or increased, then place a cross in the appropriate box ('worse' or 'better'). If the answer is not known, place a cross in the box marked 'unknown'.

8.2.2 Post-discharge treatment (Complete this section only if the patient is alive).

If it is known that, following discharge, the patient requires new **oxygen therapy.** New is defined as any treatment present now but not present on admission to the hospital with this illness. Oxygen therapy includes, NIV or home ventilation (respiratory support/treatment), then place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If not known, place a cross in the box marked 'unknown'.

If it is known that the patient requires new **dialysis/renal treatment** (renal replacement therapy or dialysis; see section 7.5 for an explanation) following discharge, then place a cross in the box marked 'yes'. If not, place a cross in the box marked 'no'. If not known, place a cross in the box marked 'unknown'.

If any **other intervention or procedure** is required following discharge, not otherwise categorized, place a cross in the box marked 'yes'. If not, place a cross in the box marked 'no'. If not known, place a cross in the box marked 'unknown'. If another treatment is required following discharge, please provide details in the space provided. Please list all treatments if multiple, other treatments are required following discharge in the ADDITIONAL INFORMATION section in the SUPPLEMENTARY CORE CRF.

8.3 If Transferred

If the patient was transferred from the current centre (hospital) to another healthcare facility, please enter the **Facility name**, in the space provided. If the patient wasn't transferred to another facility place a cross in the box marked 'N/A'.

If yes, and the patient was transferred, was the patient transferred to a facility that is participating in the study, please Place a cross (X) in the appropriate box ('yes', 'no' or 'N/A'). If yes, Place a cross (X) in the appropriate box. 'Same as above' Place a cross (X) in this box if the new facility will use the will the same participant ID number generated at your facility. 'Different' please Place a cross (X) in the

box if the new facility will be using a different participant ID number and record the participants ID number at the new facility in the boxes provided. If you do not know what the participants ID number will be at the new facility Place a cross (X) in the box N/A.

8.4. Primary Cause of death

It is conventional in many countries to list the disease or condition leading directly to death first (**primary cause of death**), followed by any other disease or condition, if any, that lead to the primary cause of death. For the primary cause of death cross (X) only one from the list provided. If other (please check this box) and clearly write the primary cause of death as in patient notes or on the death certificate.

8.5 Secondary Cause(s) of death

This should be followed by other significant conditions contributing to death (**contributory causes of death**) but not related to the disease or condition causing it. For the contributory causes of death cross (X) all that apply from the list provided. If other (please check this box) and clearly write the contributory causes of death as in patient notes or on the death certificate.

8.6 Diagnosis

Multiple diagnoses are permitted. Check the disease-specific box(es) of any pathogen or disease(s) which the patient is suspected or confirmed to have. 'yes, confirmed' refers to a laboratory confirmed pathogen, 'yes, probably' refers to a pathogen that is clinically diagnosed and laboratory testing is unavailable or has not been performed. Place a cross (X) in the appropriate box, of any suspected or laboratory-confirmed case of:

Influenza (A/H3N2, A/H1N1pdm09, B) 'yes, confirmed case', 'yes, probable', 'no' or 'other (e.g. H7N9, H5N1)'.

Coronavirus (MERS-CoV) ' yes, confirmed case', 'yes, probable', 'no' or 'N/A''.

Clinical Pneumonia 'yes', or 'no'. Clinical Pneumonia is an acute inflammatory process of the lungs due to suspected or proven infection with clinical and, if available, radiological evidence of focal or diffuse lung infiltrates that the treating clinician believes to be due to pneumonia.

Other (1-3) Please list each diagnosis the patient received during their admission on a separate line in the other, specify section (multiple diagnosis could include, ARDS, liver failure, multi-organ failure, arrhythmia, cardiac arrest) If more than 3 other diagnoses have been made, please use the Supplementary Data Form.

Please note that **any other additional information** that you believe to be relevant to the case may be recorded in the relevant section of the SUPPLEMENTARY DATA FORM.

DAILY Care Record Form - MULTIPLE DATA FORM (DAILY CRF)

Please complete daily during hospital admission Sections 1-3 as follows:

- For **Tier 1** complete day 1 of hospital admission, plus day 1 of first ICU admission and when biological samples are collected for research purposes.
- For **Tier 2** data collection will be completed on days 1&2 of hospital admission, on days 1&2 of all ICU admissions and each day biological samples are collected for research purposes. There will be multiple "daily forms".

All may be completed during the patient's hospital stay. We anticipate that most of the sections can be completed through review of hospital case-notes. Additional information can be added on the SUPPLEMENTARY DATA FORM, Section 7.

DETAILED GUIDANCE ON COMPLETING THE DAILY CRF

I] Patient identification number

Identical to Core CRF, enter the patient identification number. Please refer to General Guidance on pages 1 and 2 for more information.

Section 1: DATE OF ASSESSMENT

Indicate at the beginning of the Daily Case Record Form the day of data collection and sampling (may not be the date of completion). This may be retrospective information at the time of discharge (transfer to other hospital or dead in hospital). This will be in the format of day/month/year (DD/MM/YYYY).

Section 2: DAILY TREATMENT

This section refers to clinical assessments that are typically conducted and recorded in the emergency room and/or the ward or acute medical unit to which the patient was admitted during the 24 hours period.

2.1 Current admission to Intensive Care Unit (ICU) / Intensive Therapy Unit (ITU) / Intermediate Care Unit (IMC) / High Dependency Unit (HDU)?

This relates to whether the patient was admitted to the ICU or HDU on the date of assessment. Place a cross (X) in the appropriate box: yes, (if admitted) or no (if this is not the case). If the answer is unknown, please cross the box marked 'N/A'.

If the answer is yes, please answer the following section 2.2, If the answer is NO or unknown skip this section and go to section 3, if the answers are not available please indicate this by writing 'NA'.

2.2 Record the worst value in the previous 24hours

This relates to the worst values recorded on the date of assessment. Please cross (X) all boxes as requested by marking the appropriate choice (yes, no, estimated, alive, dead). If one or more data requested is not available mark "NA" in the data field. Please do not forget or omit to fill in all values as requested for the following:

2.2.1 **FiO_2** (0.21-1.0)

If the patient was intubated and ventilated on the date of assessment, enter the fraction of inspired oxygen (FiO_2 0.21 -1.0) as determined by the mechanical ventilator settings. The value entered should reflect the FiO_2 setting with the **lowest** ratio of PaO_2 to FiO_2 used on the date of assessment. If the FiO_2 is not known, place NA in the data field.

To determine the PaO2/FiO2 ratio, the PaO2 is measured in mmHg and the FiO2 is expressed as a decimal between 0.21 and 1. As an example, if a patient has a PaO2 of 60 mmHg while receiving 60% oxygen, then the PaO2/FiO2 is 60/0.6 = 100 mmHg.

To convert kPa to mmHg please multiply kPa by 7.5. As an example, if a patient has a kPa of 11, 11 X 7.5 = 82.5 mmHg.

2.2.2 SaO_2 (at time of FiO_2)

SaO_2(oxygen saturation) as determined by arterial blood gas analysis or transcutaneous pulse oximetry. This SaO2 must correspond with the lowest FiO2 measurement documented in 2.2.1 Please fill in the lowest value in percentage (%). If the SaO2 is not known, place NA in the data field.

2.2.3 $Pa0_2$ (at time of FiO_2)

PaO2 (partial pressure of oxygen in blood) as determined by arterial/venous/capillary blood gas analysis. This PaO2 must correspond with the lowest FiO2 measurement documented in 2.2.1. Please fill in the lowest value in either mmHg or kPa depending on the output of your blood gas analyser. If the PaO_2 is not known, place NA in the data field.

- **PaO_2 sample type**, please cross (X) the appropriate box as requested by marking the choice that correspond to the sample type (arterial, venous, capillary). If the sample type is not known, please mark the box 'N/A'.

2.2.4 From the same blood gas record as PaO_2, indicate the following values as requested if available:

- **$PaCO_2$** is the partial pressure of carbon dioxide measured in the sample.
- **pH** is the measure of the activity of the (solvated) hydrogen ion (H+) measured in the sample.
- **HCO_3^-** refers to the bicarbonate measured in the blood gas sample.
- **Base excess** refers to standardised base excess (SBE). If standardised base excess is not reported, enter the base excess value presented, this can be either a positive or negative value.
- If any of the above values are not known, please indicate this with 'NA' in the data field.

2.3 Glasgow Coma Scale (GCS / 15) Score

GCS - Insert the lowest calculated value (between 3-15) on the date of assessment following the assessment of eye, motor and verbal responses, please add the score for eye, verbal and motor responses and enter the total score in the CRF:

Glasgow Coma Score

		Score
Eye Response	Does not open eyes	1
	Opens eyes in response to painful stimuli	2
	Opens eyes in response to voice	3
	Opens eyes spontaneously	4
Verbal Response	Makes no sounds	1
	Incomprehensible sounds	2
	Utters inappropriate words	3
	Confused, disoriented	4
	Oriented, converses normally	5
Motor Response	Makes no movements	1
	Extension to painful stimuli (decerebrate response)	2
	Abnormal flexion to painful stimuli (decorticate response)	3
	Flexion / Withdrawal to painful stimuli	4
	Localises painful stimuli	5
	Obeys commands	6

If the patient is intubated and/or sedated please document the patients GCS recorded closest to but prior to intubation and / or sedation. If the time when the patient was last able to be assessed for GCS has not changed since the previous day's entry (ie they have remained sedated and or intubated since the last assessment) please write NA. If there is no documented GCS from a time when they were not intubated /sedated please write NA.

2.6 Mean arterial pressure (MAP)

Complete this field with the mean arterial pressure (in mmHg) as determined by invasive (arterial) blood pressure measurement, if a non-invasive/manual method was used e.g. sphygmomanometer calculate the MAP using the following formula MAP = [(2 x diastolic)+systolic] / 3 if blood pressure measured non-invasively. Please fill in the lowest value recorded during the 24hours period. Please fill in the **lowest** value recorded on the date of assessment. If the MAP is not known, place NA in the data field.

2.7 Urine flow rate

Record the patient's urine output (in ml/24hours) over the date of assessment. If this is estimated place a cross (X) in the box marked 'estimated'.

2.8 Is the patient currently receiving or has received in the past 24Hrs (apply to all questions in this section):

2.8.1 Non-Invasive ventilation (eg. BIPAP, CPAP)?

If the patient received non-invasive ventilation (NIV), defined as the provision of ventilatory support through the patient's upper airway using a mask or similar device, at any time on the date of assessment, place a cross (X) in the box marked 'yes'. If they did not, place a cross in the box marked 'no'. If the answer is not known, place a cross the box marked 'N/A'.

Please note that BiPAP and CPAP ventilation modes are not unique to NIV; they can also be given via invasive mechanical ventilation, so please check.

2.8.2 Invasive ventilation?

Invasive ventilation means that patient has undergone tracheal intubation, for the purpose of invasive mechanical ventilation. Invasive ventilation is a method to mechanically assist or replace spontaneous breathing in patients by use of a powered device that forces oxygenated air into the lungs. The mode of intubation may be orotracheal, nasotracheal, or via a cricothyrotomy or tracheotomy. If invasive ventilation was used at any time on the date of assessment, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

2.8.3 High Frequency Oscillatory Ventilation?

This refers to high frequency oscillatory ventilation (HFOV). If the patient received HFOV at any time on the date of assessment, place a cross (X) in the box marked 'yes'. If they did not, place a cross in the box marked 'no'. If the answer is not known, place a cross in the box marked 'N/A'.

2.8.4 Extracorporeal membrane oxygenation (ECMO)/ECLS?

Extracorporeal membrane oxygenation (ECMO) is an extracorporeal technique of providing cardiac and respiratory support to a patient, with the ability to oxygenate and remove carbon dioxide from blood. Extracorporeal Life Support (ECLS) is a variation of cardiopulmonary bypass, it maintains tissue oxygenation for days to weeks in patients with life threatening respiratory or cardiac failure (or both). If the patient received ECMO/ECLS at any time on the date of assessment, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

2.8.5 Interventional lung-assist (iLA) therapy?

Interventional lung-assist (iLA) therapy is typically a pump-less method capable of improving extracorporeal gas exchange with a membrane that is integrated in a passive arteriovenous shunt. An example device is the Novalung® iLA membrane ventilator. If the patient received iLA at any time on the date of assessment, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

2.8.6 Dialysis / Hemofiltration?

Dialysis or renal replacement therapy includes haemodialysis, peritoneal dialysis (PD), intermittent haemodialysis (IHD), on-line intermittent haemofiltration (IHF), on-line haemodiafiltration (IHDF), continuous haemofiltration (CHF) and continuous haemodiafiltration (CHDF), continuous

venovenous haemofiltration (CVVH), continuous venovenous haemodialysis(CVVHD), continuous venovenous haemodiafiltration (CVVHDF), slow continuous ultrafiltration (SCUF), continuous arteriovenous haemofiltration (CAVHD) and sustained low-efficiency dialysis (SLED).If the patient received dialysis or RRT at any time on the date of assessment, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

2.8.7 Any vasopressors/inotropic support?

A **vasopressor** is a pharmaceutical agent that causes vasoconstriction, thereby increasing blood pressure. Agents include norepinephrine, epinephrine, vasopressin, terlipressin and phenylephrine. Some inotropes also demonstrate vasopressor activity.

An **inotrope** is a pharmaceutical agent that alters the force of myocardial contractility. Commonly used 'positive' inotropes include dobutamine, dopamine, milrinone and adrenaline (epinephrine)

If the patient received a vasopressor or inotrope at any time on the date of assessment, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

2.8.8 Oral rehydration only?

If the patient did *not* receive supplemental fluids (colloid solutions and crystalloid solutions) via intravenous or intraosseous replacement method at any time on the date of assessment, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

2.8.9 Intravenous immunoglobulin?

Examples of commercial intravenous immunoglobulin IVIG preparations include Octagam®, Intragam P®, KIOVIG®, Flebogamma 5% DIF®, Carimune NF®, Gamunex®, Gammagard S/D®, Gammagard Liquid®, Gammaked® and Privigen®. If the patient received intravenous immunoglobulin (IVIG, human normal immunoglobulin for intravenous administration) at any time on the date of assessment, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

2.8.10 Blood transfusion or products?

If the patient received a transfusion of blood (whole blood or packed red blood cells) or other blood products excluding human normal immunoglobulin (e.g. albumin, granulocytes, platelets, fresh-frozen plasma (FFP), FP24, PF-24, cryoprecipitate, protein C concentrate, cryosupernatant, or a specific non-recombinant clotting factor) at any time on the date of assessment, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

2.8.11 Plasmapheresis/exchange?

Plasmapheresis (plasma exchange) refers to the extracorporeal separation of blood components, resulting in a filtered product. Methods include discontinuous flow centrifugation, continuous flow centrifugation and plasma filtration. If the patient received plasmapheresis at any time on the date of assessment, place a cross (X) in the relevant box ('yes', 'no', or 'N/A').

2.8.12 Other intervention or procedure:

Please mention here any other specific therapeutic intervention(s) or procedure(s)not otherwise characterised that you believe may be relevant.

Section 3: DAILY LABORATORY RESULTS

This section refers only to those laboratory tests that were **routinely** performed at the time that the patient stayed in the clinical centre (hospital) and collected on the date of assessment. If laboratory samples were taken on the date of assessment, place a cross (X) in 'yes' box, if no laboratory samples were taken on the date of assessment, place a cross (X) in 'no' box and skip this section.

Where different units of measurements are provided, **please place a cross (X) in the appropriate unit of measurement**. If the test was not performed on the date of assessment then please enter 'NA'.

Biochemistry & Haematology

Enter the results of biochemistry and haematology laboratory investigations here, remembering to cross (X) the appropriate unit of measurement after entering the value. If more than one measurement was recorded on the day please enter **the most abnormal** value recorded. The most abnormal value may come from different samples taken on the same day, e.g. the most abnormal WBC and the most abnormal Hb might come from a different sample collected on the same day. If any individual test was not performed or the result is unavailable, please enter 'NA' in the data field. Please do not forget or omit to fill in all values as requested for the following:

3.1 **Haemoglobin** (Hb or Hgb) refers to haemoglobin concentration measurement in blood.

3.2 **Haematocrit** (Ht or HCT), also known as packed cell volume (PCV) or erythrocyte volume fraction (EVF), is the volume percentage (%) of red blood cells in blood.

3.3 **WBC count** is the total white blood cell count in blood.

3.4 **Platelets** refers to the platelet count in blood.

3.5 **APTT** is activated partial thromboplastin time, measured in seconds. APTR is the activated partial thromboplastin ratio. Please enter the value and circle the test used ('APTT' or 'APTR').

3.6 **PT** is the prothrombin time. **INR** is the international normalised ratio. Enter the value and Place a cross (X)) to indicate which test was used ('PT' or INR'). If both PT and INR were reported, please provide the PT result.

3.7 **ALT** is alanine transaminase (also called serum glutamic pyruvate transaminase, **SGPT**).

3.8 **Total Bilirubin** refers to *total* bilirubin measured in the blood.

3.9 **C-reactive protein** (CRP) refers to the blood (serum or plasma) CRP level.

3.10 **AST** is aspartate transaminase (also called serum glutamic oxaloacetic transaminase, **SGOT**).

3.11 **Glucose** refers to blood glucose.

3.12 **Erythrocyte Sed Rate** is the erythrocyte sedimentation rate (ESR; Biernacki's Reaction). It is the rate at which red blood cells sediment in a period of one hour, measured in millimetres per hour (mm/h) and performed under standardised laboratory conditions (e.g. anticoagulated blood placed in an upright Westergren tube).

3.13 **Blood urea nitrogen** (BUN) is also known as 'urea', measured in a blood sample.

3.14 **Lactate** refers to blood lactate.

3.15 **LDH** is lactate dehydrogenase, measured in a sample of arterial or venous blood.

3.16 **Creatine kinase** (CK, or creatine phosphokinase, CPK) refers to total creatine kinase measured in the blood.

3.17 **Creatinine** refers to serum creatinine.

Section 4: Chest X-RAY

This section refers only to any chest x-rays that were routinely performed at the time that the patient stayed in the clinical centre (hospital) and collected on the date of assessment. If a chest x-ray was performed, place a cross (X) in 'yes', if no chest x-ray was performed, Place a cross (X) in no, and skip this section. Place a cross (X) in the appropriate box for the presence of infiltrates ('yes', 'no', or 'N/A'). If yes, check all boxes in which infiltrates were present.

SUPPLEMENTARY TO CORE CRF (SUPPLEMENTARY CRF)

This is extra space for information that does not fit in the space provided in the Core Case Record Form (Core CRF).

All information may be completed during the patient's hospital stay. We anticipate that most of the sections can be completed through review of hospital case-notes.

DETAILED GUIDANCE ON COMPLETING THE SUPPLEMENTARY CRF

I] Patient identification number

Identical to Core CRF, please refer to General Guidance on pages 1 and 2 for more information.

CORE – SECTION 1 TRAVEL: Did the patient travel in the 14 days prior to first symptom onset?

This refers to travel to another part of the country or abroad to another country within 14 days before symptoms relating to the current illness began. If the patient has travelled away from their usual place of residence within 14 days of symptom onset, enter the location that was visited. Up to three locations can be entered. Please enter the name of the city/geographical area visited and the country.

For each place/country visited, please enter the date that they returned to their usual place of residence. The date should be entered in day/month/year format (DD/MM/YYYY). For example, if the patient returned on 4th January 2013, enter 04/01/2013. If the specific day is unknown, please enter the closest approximate day.

CORE – SECTION 1: ANIMAL EXPOSURES: Did the patient have contact with live/dead animals, raw meat or insect bites In the 14 days prior to first symptom onset?

Close contact with live animals refers to:

- direct physical contact with, or having been in close proximity to, live animals, OR
- having visited an environment containing live animals (e.g. farm, market, zoo), OR
- a history of insect bites (e.g. bites from ticks or fleas), OR
- having been involved in the slaughter or dissection of animals or having visited an environment where animals are slaughtered or dissected, OR
- having been involved in the veterinary care of animals

These events must have occurred within the 14 day period leading up to the onset of symptoms. Contact with household pets (e.g. cats and dogs) or other animals kept within the home should also be recorded. Place a cross (X) in one of the box options ('Yes', 'No', or 'N/A'). If YES, specify the animal/insect, type of contact and date of expure in the format DD/MM/YYYY in the third column.

CORE – SECTION 2: ADMISSION IMMUNOSUPPRESSANT: Receiving immunosuppressants (including inhaled/oral corticosteroids) prior to admission

This refers to a patient who is known to have taken prescribed medications that are known to have an immunosuppressing effect. Examples include oral, intravenous or inhaled corticosteroids, chemotherapeutic agents and anti-transplant-rejection medications (other examples exist).

In the table entre the name of the immunosuppressant, then enter the dose (including units) and frequency of administration. If not known, place a cross (X) in the box marked 'N/A'. For route of administration, place a cross in the appropriate box ('IV'; 'oral'; 'inhaled'; 'other'; 'N/A'). Duration is the period from when the medication was commenced up to the date of admission; please write the number of days/weeks the immunosuppressant was administered and place a cross in the appropriate box ('days'; 'weeks'; 'N/A') for example, if the immunosuppressant was administered for 7weeks prior to hospital admission, write 7 and place a cross (X) in the 'weeks' box.

CORE – SECTION 2: ADMISSION ANTI-INFECTIVES: Treated with anti-infectives (antibodies and anti-virals) for this illness episode prior to admission.

This section refers to specific pharmaceutical interventions. Please provide a response for all agents administered prior to admission to the clinical centre (hospital).

Antibiotics refer to any agent(s) prescribed specifically to treat a suspected or confirmed bacterial infection prior to hospital admission. Topical preparations are not included.

Antivirals refer to any agent(s) prescribed specifically to treat a suspected or confirmed viral infection. Examples of neuraminidase inhibitors include oseltamivir, ribavirin, acyclovir and lopinavir/ritonavir (note that other examples exist). Antivirals may have been given for the treatment of viral infections other than a SARI-causing infection. Topical preparations are not included.

If an **anti-infective** was administered at any point prior the patient's hospital admission, please complete the details in the space provided as follows:

In the table enter the name of the anti-infectives. Then enter the dose (including units) and frequency of administration. If not known, place a cross (X) in the box marked 'N/A'. Enter the start date and end date in the appropriate column, both in the format of day/month/year; if the end date is 'on-going' at the time of admission place a cross (X) in the box marked 'on-going' and leave the end date space blank. For route of administration, place a cross in the appropriate box ('IV'; 'oral'; 'inhaled'; 'other'; 'N/A').

CORE – ADDITIONAL INFORMATION.

Use this space to add any additional information not captured in the CORE CRF.

CORE – SECTION 5: PATHOGEN TESTING

This refers to laboratory assays used to detect SARI-causing pathogens or for infections other than the SARI-causing pathogens of interest during the patient's hospital stay with suspected/confirmed SARI-causing infection. Detection by polymerase chain reaction (PCR) testing is a commonly used method. Rapid antigen and serological testing (to detect antibodies against the pathogen) may also be employed. If pathogen testing was performed at any time during the patient's hospital stay with suspected or confirmed SARI-causing infection, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If it is not known whether pathogen testing was performed, place a cross in the box marked 'N/A'.

In the first column please state the Biospecimen (sample) **collection date** (in day/month/year format DD/MM/YYYY). If 'other' sample type is selected, please indicate the type of sample. In the second column indicate the '**Biospecimen Type'**.

In the third column (‘**laboratory test method’**), place a cross in the box marked ‘PCR’ if polymerase chain reaction was used, or culture; otherwise, place a cross in the box marked ‘other’ and write in the method of testing. If the method is not known, write ’N/A ’.

In the fourth column, please document the **result** of the biospecimen, whether the named pathogen was detected (positive) in that sample type or was not detected (negative), by placing a cross (X) in the appropriate box (‘positive’ or ‘negative’). For each sample type, if testing was not performed or the result is unknown, place a cross in the box marked ‘N/A’.

In the fifth column (‘**pathogen tested/detected**’), please state the name of the pathogen that the test was trying to detect.

Where both positive and negative results for a particular sample type exist (from samples taken at different time points during the patient’s hospital stay) please record the earliest positive result.

If only multiple negative results exist for a particular sample type (from samples taken at different time points during the patient’s hospital stay), please document the earliest negative result.

CORE – SECTION 7: MEDICATION: ANTI-INFECTIVES & CORTICOSTEROIDS.

This section refers to specific pharmaceutical interventions administered during hospitalisation and at discharge. Please provide a response for all agents listed.

Antiviral Agent refers to any agent(s) prescribed to treat or prevent viral infections by interfering with the viral replication cycle. Examples of neuraminidase inhibitors include oseltamivir, ribavirin, acyclovir and lopinavir/ritonavir (note that other examples exist). Antivirals may have been given for the treatment of viral infections other than a SARI-causing infection. Topical preparations are not included.

Antibiotic refers to any agent(s) are substances naturally produced by microorganisms or their derivatives that selectively target microorganisms not humans. Antibiotics kill or inhibit the growth of microorganisms by targeting components of the microbial cell absent from human cells, including bacterial cell walls, cell membrane, and 30S or 50S ribosomal subunits. These substances are used in the treatment of bacterial and other microbial infections. Topical preparations are not included.

Corticosteroids (commonly referred to as ‘steroids’) refers to all types of therapeutic corticosteroid, made in the adrenal cortex (the outer part of the adrenal gland). They are also made in the laboratory. Corticosteroids have many different effects in the body, and are used to treat many different conditions. They may be used as hormone replacement, to suppress the immune system, and to treat some side effects of cancer and its treatment. Corticosteroids are also used to treat certain lymphomas and lymphoid leukaemias. Examples include: prednisolone, prednisone, methyl-prednisolone, dexamethasone, hydrocortisone, fluticasone, betametasone (note that other examples exist). Topical preparations are not included, but inhaled preparations are included. The indication for administering corticosteroids is not important and does not need to be directly related to the treatment of illness arising from SARI-causing infection.

If **anti-infectives** and/or **corticosteroids** were administered at any point during the patient’s hospital admission and at discharge, please complete the details in the space provided in the table:

Enter the name of medication. Then enter the dose (including units) and frequency of administration. If not known, place a cross (X) in the box marked ‘N/A’. Duration is the period from

when the medication was administered, enter the start date and end date in the appropriate column, both in the format of day/month/year; if the end date is 'on-going' at the time of admission Place a cross (X) in the box marked 'on-going' and leave the end date space blank. If the end date is unknown place NA in the data field. For route of administration, place a cross in the appropriate box ('IV'; 'oral'; 'inhaled'; 'other'; 'unknown').

CORE- ADDITIOAL INFORMATION

In the space provided document any additional information you deem relevant not captured in the CRF.

SUPPLEMENTARY EPIDEMIOLOGY CASE RECORD FORM (EPIDEMIOLOGY CRF)

Please complete at discretion of the site if this information is in your interest. All information may be completed during the patient's hospital stay. We anticipate that most of the sections can be completed through review of hospital case-notes. Additional information can be added on the SUPPLEMENTARY DATA FORM, Section 7.

DETAILED GUIDANCE ON COMPLETING THE EPIDEMIOLOGY CRF

I] Patient identification number:

Identical to patient identification number already used, please refer to General Guidance on pages 1 and 2 for more information.

Section 1: EXPOSURES IN THE PREVIOUS 14 DAYS

Close contact is defined as:

- Anyone who provided care for the patient, including a health care worker or family member, or who had other similarly close physical contact;
- Anyone who stayed at the same place (e.g. lived with, visited) as a probable or confirmed case while the case was symptomatic.

1.1 Confirmed case contact?

This refers to close contact with a human case of laboratory-confirmed Influenza (A/H3N2, A/H1N1pdm09, A/H7N9, A/H5N1, B), Coronavirus, Clinical pneumonia or Other, prior to symptom onset in the patient. Place a cross (X) in the appropriate box ('yes, 'no' or 'N/A').

1.2 Probable case contact?

This refers to close contact with a human case of probable or suspected Influenza (A/H3N2, A/H1N1pdm09, A/H7N9, A/H5N1, B), Coronavirus, Clinical pneumonia or Other, prior to symptom onset in the patient. Place a cross (X) in the appropriate box ('yes, 'no' or 'N/A').

1.3 Travel?

This refers to travel to another part of the country or abroad to another country within 14 days before symptoms relating to the current illness began. If the patient has travelled away from their usual place of residence within 14 days of symptom onset, Place a cross (X) in one of the boxes, as appropriate ('yes', 'no' or 'N/A').

1.4 Animal?

This refers to a patient who had contact with live/dead animals, raw meat or insect bites in the 14 days prior to first symptom onset. Close contact with live animals refers to:

- direct physical contact with, or having been in close proximity to, live animals, OR
- having visited an environment containing live animals (e.g. farm, market, zoo), OR
- a history of insect bites (e.g. bites from ticks or fleas), OR
- having been involved in the slaughter or dissection of animals or having visited an environment where animals are slaughtered or dissected, OR
- having been involved in the veterinary care of animals

These events must have occurred within the 14 day period leading up to the onset of symptoms. Contact with household pets (e.g. cats and dogs) or other animals kept within the home should also be recorded. Place a cross (X) in one of the box options ('Yes', 'No', or 'N/A').

1.5 Occupational?

This refers to close contact with a work colleague or patient (if a health professional) with suspected or laboratory confirmed Influenza (A/H3N2, A/H1N1pdm09, A/H7N9, A/H5N1, B), Coronavirus, Clinical pneumonia or Other, place a cross (X) in the appropriate box ('yes, 'no' or 'N/A').

Section 2: LIVING ARRANGEMENT

This refers to the primary living arrangement of the patient within the 14 days prior to presentation to hospital. Place a cross(X) in the box that indicates the primary living condition ('home', 'military base', 'shelter', 'correctional institution, 'boarding school/dormitory', 'nursing home/long term healthcare facility', 'other').

If the answer is 'home', please indicate the number of people living at home including the patient in the space provided.

If the answer is 'other', please clearly specify, e.g. friends' house, hostel, caravan

2.1 Occupation

Please indicate the patient's main source of income or occupation, e.g. farmer, truck driver, office worker, housewife/househusband.

Section 3: VACCINATION HISTORY

3.1 Influenza immunisation this season

If the patient has received an influenza vaccination **this** season, place a cross (X) in the box marked 'yes'. If the patient has received an influenza vaccination within the last year but either it was not the vaccination for this season or if influenza is not seasonal mark 'yes' this year but not this season/no clear influenza season. If the patient has not received an influenza vaccine within the last year mark 'no'. If vaccination history is not known, place a cross in the box marked 'N/A'

If yes, indicate if patient received it more (>) than 14 days prior to illness onset, and place a cross (X) in the box that indicates this. Or if the patient received it less (<) than 14 days prior to illness, place a cross in the corresponding box.

If yes, indicate the vaccination type received, place a cross (X) as appropriate in one of the two options: TIV (injected) or LAIV (inhaled).

If yes and the patient is less than 9 years old and this is their first flu vaccination, please indicate the number of vaccinations received by crossing (X) in the appropriate box (one out of the two options) 1st dose or 2nd dose .

3.2 Pneumococcal vaccination ever

If patient has received a pneumococcal vaccination **ever**, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If vaccination history is not known, place a cross in the box marked 'N/A'.

If yes, indicate the age that the patient received it in the space provided. If the age is not known Place a cross (X) in the box marked 'N/A'.

If yes, indicate the type of vaccination by crossing (X) the appropriate box for: 7-valent conjugate, 13-valent conjugate, 23-valent polysaccharide. If this is not known, place a cross (X) in the box marked 'N/A'.

3.3 Haemophilus influenza type b vaccination

If patient has received a Haemophilus influenza type b vaccination, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If vaccination history is not known, place a cross in the box marked 'N/A'.

If yes, indicate the age that the patient received it in the space provided. If the age is not known Place a cross (X) in the box marked 'N/A'.

3.4 RSV immunisation Palivizumab (if applicable)

If applicable and the patient has received RSV vaccination Palivizumab, place a cross (X) in the box marked 'yes'. If not, place a cross in the box marked 'no'. If vaccination history is not known, place a cross in the box marked 'N/A'.

3.5 Other

In case of a study into re-emergence of another vaccine preventable disease please mark yes and continue with the following questions. If not relevant to the disease being studied please mark 'no'. If unknown, place a cross in the box marked 'N/A'.

3.5.1 If YES: Name of disease

Indicate the name of the disease to which the vaccination is directed (eg measles)

3.5.2 If YES: Has the patient ever been vaccinated against this disease?

Indicate whether the patient has ever been vaccinated against this disease. If not known place a cross (X) in the box marked 'N/A'.

3.5.3 If YES: Age at first receipt of vaccine:

Please indicate age at which the patient received the vaccine. If not known place a cross (X) in the box marked 'N/A'.

3.5.6 If YES: Number of doses received to date:

Please enter the number of doses the patient has received in their life so far. If not known place a cross (X) in the box marked 'N/A'.

3.5.7 If YES: Time since last received dose:

Please indicate the time in days since the patient last received a dose of vaccine (14 or more days before first onset of symptoms, or less than 14 days). If not known place a cross (X) in the box marked ‘N/A’.