



PICANet Custom Data Collection

COVID-19

Version 1.1 (May 2020)

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Introduction

Background

PICANet has developed the COVID-19 customised data collection in collaboration with the Clinical Advisory Group and PICS.

This data collection will collect additional information about -

1. Children aged less than 18 years for whom a diagnosis of Covid-19 is confirmed by laboratory diagnosis during or immediately prior to admission to a paediatric intensive care unit (PICU) and
2. Children who remain COVID-19 suspected or probable after repeated COVID-19 negative laboratory test results and in the presence of no other positive virology and bacteriology results.

This will include children admitted with multi-system inflammatory syndrome exclusive of other anti-microbial cause, provisionally called paediatric inflammatory multisystem syndrome temporally associated with SARS-CoV-2 (PIMS-TS).

The additional data items include details about testing for COVID-19, symptoms, coinfection laboratory markers, echocardiogram findings and medication used.

Details about testing for children is required to understand the use of different sampling for the identification of COVID-19. Please record the details for the **testing episode, which includes the COVID-19 positive test result** and up to two previous sampling episodes which record negative results or; up to three sampling episodes for children recorded in this dataset for whom repeated COVID-19 negative laboratory test results are returned.

If the patient was COVID-19 positive (by laboratory testing) prior to admission to your PICU please record the date and as much information as possible about this testing episode.

For children transferred from the first admitting PICU to a second PICU for continuing care both units are required to complete the customised data collection.

Diagnostic coding for COVID-19

The following READ diagnostic codes for Coronavirus -COVID 19 are available on PICANet Web. Not all codes may be available on local data collection systems importing data to PICANet Web:

Y20d1 Confirmed Coronavirus (COVID-19) infection

Y20cf Suspected Coronavirus (COVID-19) infection

A765. Coronavirus infection

AyuDC [X] Coronavirus, unspecified

A7y00 Coronavirus as cause of disease classified to other chapters

Data collection method

1. A PICANet COVID-19 customised data collection form is completed for all admissions to PICU, for whom the diagnosis of COVID-19 was confirmed as positive by laboratory testing and; for those admissions who are COVID-19 suspected or probable after repeat negative testing; but clinicians agree that the clinical presentation is consistent with COVID-19 infection. This includes multi-system inflammatory syndrome exclusive of any other microbial cause (PIMS-TS).

COVID-19 Custom Data Collection Form (version 1.1 May 2020)

2. When the PICU enters or uploads to PICANet Web the admission event data, the additional customised dataset is manually recorded onto the COVID-19 tab. This tab is available for all children admitted from January 1st 2020.

1. Select one of the options in the drop down box
2. Enter the dataset recorded on the COVID-19 paper customised data collection form

Patient details

Family name or Surname

Definition	The last or family name or surname given to the child as it would appear on the child's birth certificate or other appropriate document.
Reason	<p>Family name provides an additional identifier that can aid patient tracking throughout the hospital and PICANet Web.</p> <p>Can help identify individuals who may have had multiple admissions to one or more PICUs.</p>
Format	<p>Free text (e.g. Brown).</p> <p>If no family name available record as UNKNOWN</p>

First name

Definition	The first name given to the child as it would appear on the child's birth certificate or other appropriate document.
Reason	<p>First name provides an additional identifier that can aid patient tracking throughout the hospital and PICANet Web.</p> <p>Can help identify individuals who may have had multiple referrals and /or admissions to one or more PICUs.</p>
Format	<p>Free text (e.g. John).</p> <p>If no first name available record as UNKNOWN</p>

Postcode

Definition	The postcode for the child's normal place of residence.
Reason	<p>Postcode provides an additional identifier that can aid patient tracking throughout the hospital and PICANet Web.</p> <p>Can help identify individuals who may have had multiple admissions to one or more PICUs.</p> <p>Postcode provides a means of linkage to geographic and demographic information for effective audit and assessment of health services delivery.</p>
Format	<p>Text (e.g. S10 8NN).</p> <p>Foreign postcodes will be accepted by the software, although a warning will be generated in the case of non-UK standard postcodes to ensure that the user checks the data.</p> <p>If postcode is unobtainable, record as UNKNOWN</p>

NHS, CHI or H&C number

Definition	Unique identifying number enabling tracing of a patient through the NHS system in England, Wales and Northern Ireland. For English and Welsh patients the NHS number, for Scottish patients the CHI number and for Northern Ireland the H&C number is used as a unique numeric identifier.
Reason	<p>NHS, CHI or H&C number gives a unique, identifiable variable that will allow other identifiable data items to be removed from the database.</p> <p>Can help identify individuals who may have had multiple referrals, transport and/or admission events to one or more PICUs.</p>
Format	<p>Free text (e.g. 1463788990).</p> <p>Validation check that NHS, CHI or H&C number is a valid number</p>

Case note number

Description	<p>Unique identifying number for an individual's hospital records at the treating unit.</p> <p>Allocated on first admission to hospital.</p>
Reason	Case note number provides a unique identifier that can aid patient tracking throughout the hospital.
Format	Free text (e.g. AB145C).

Date of birth

Definition	The child's date of birth as recorded on the child's birth certificate or other appropriate document.
Reason	<p>Date of birth and Date of admission are used to calculate age at admission to your unit.</p> <p>Date of birth provides an additional identifier that can aid patient tracking throughout the hospital and PICANet Web.</p> <p>Can help identify individuals who may have had multiple referrals and/or admissions to one or more PICUs.</p>
Format	<p>Date; dd/mm/yyyy.</p> <p>Date of birth should be on or prior to the Date of admission.</p> <p>If the child's date of birth is unobtainable, but the child is under your care, use your judgement to estimate year of birth and record as 1 January of estimated year (e.g. 01/01/YYYY).</p> <p>If information is being extracted from notes and the child's date of birth is not recorded, or recorded as unavailable, leave the field blank and in the 'Indicate if date of birth is' field below tick 'Unknown'.</p> <p>If it is necessary for Date of birth to be partly anonymised, enter the correct month and year and record 01 for the day (e.g. 01/MM/YYYY). Then tick 'Anonymised' below.</p>
Validation rule	Warning if patient is aged 18 years or older

COVID-19 Dataset

Testing and sampling for COVID-19 during this admission

Please record the samples taken at the time of the **first positive sample**, and up to **two most recent testing episodes for which negative results** were received, from a date and time prior to the positive sample. Record all samples taken at each episode of testing for example, *TESTING 1*: ET secretions positive, *TESTING 2*: NPA negative, *TESTING 3*: throat swab negative.

If the diagnostic status remains **COVID-19 clinically suspected and probable** and there are more than three testing episodes with Negative confirmed results; record the first three testing episodes following admission to PICU.

COVID-19 test positive prior to this PICU admission

Definition	Identifies whether the child had a COVID-19 confirmed positive test result prior to this admission to PICU. Includes a test undertaken in another ward or department in the same hospital and/or the original admitting hospital for children retrieved/transferred to PICU.
Reason	Assists with tracking of the testing process and status.
Format	Choose from one of the following <ul style="list-style-type: none">▪ Yes▪ No
Validation rule	Warning if value not entered

TESTING Episodes I, II & III

Date and time of testing

Definition	The actual date and time one or more samples were taken for testing for COVID-19. 24-hour period, starting from 00:00hrs. 23:59 is the end of one day and 00:00 is the start of the next day.
Reason	Date and time of testing is used to identify cases where more than one testing session was undertaken in order to identify a confirmed positive COVID-19 diagnosis.
Format	Date: dd/mm/yyyy. Time: (24 hour clock); hh:mm
Validation rule	Warning if value for date and time not entered for Testing I

Reason for testing

Definition	<p>The reason for undertaking this testing session</p> <p>Suspected infection - defined as a patient for whom the diagnosis of COVID-19 is clinically suspected</p> <p>or</p> <p>Routine screening- defined as a patient from whom samples are taken routinely for screening, such as on admission to hospital or PICU.</p>
Reason	Important to identify the reason for this testing session
Format	Choose from one of the following <ul style="list-style-type: none">▪ Suspected infection▪ Routine screening
Validation rule	Warning if value not selected

Types of samples taken

Definition

Specify the types of samples taken at the specified date and time of testing.

Record up to three testing episodes; if more than three have been undertaken record the testing episode from which one or more samples were COVID-19 Positive confirmed in Testing I and up to two most recent episodes of testing, prior to this date and time, in Testing II and III.

If all results for COVID-19 are Negative confirmed, record the first three testing episodes following admission to PICU.

Record all samples taken at each episode of testing. For each type of sample listed record one of the following: sample not taken, positive result, negative result or failed test.

For example: TESTING 1: Date: 25.04.2020 - ET secretions positive result and NPA negative result, Throat swab and Broncho alveolar lavage fluid- samples not taken.

TESTING 2: 24.04.2020 - Throat swab only – negative result; NPA, ET secretions and Broncho alveolar lavage fluid – samples not taken.

If the first positive COVID-19 laboratory test result was obtained prior to admission to PICU and the patient is treated as COVID-19 confirmed positive, record this result in Testing I and up to two further testing episodes after admission to PICU. For example: TESTING 1: (in original admitting hospital) NPA positive TESTING 2 ET secretions negative, NPA negative, Throat swab and Broncho alveolar lavage fluid- samples not taken.

Types of sample:

Nasopharyngeal aspirate

Throat swab

Endotracheal secretions

Broncho alveolar lavage fluid

Other sample – specify type of sample and result in free text box

For each type of sample listed choose one of the following:

- Sample not taken
- Positive result
- Negative result
- Failed test

Reason

To measure the type of sample taken and the process of testing prior to confirmation of a COVID-19 positive result

Format	For each type of test listed choose from one of the following: <ul style="list-style-type: none"> ▪ Sample not taken ▪ Positive result ▪ Negative result ▪ Failed test
Validation	Warning if date of testing recorded and value not entered

Laboratory Markers at Admission

Definition	<p>Identifies the laboratory markers measured at admission and the results of the tests listed.</p> <p>C-reactive protein, Ferritin, Haemoglobin, Neutrophil count, Lymphocyte count, Neutrophil count, Platelet count, Serum triglycerides, BNP - B-type natriuretic peptide, NT-proBNP – NT-proB-type Natriuretic Peptide, Troponin I and D-dimers</p> <p>*If the results of any samples taken are pending return, at the time of data completion, please ensure this data is subsequently recorded.</p>
Reason	Required to understand the significance of laboratory test results for the children admitted to paediatric intensive care.
Format	<p>For all tests undertaken complete the results in the boxes provided.</p> <p>If results are reported in other units of measure record the result and specify the unit of measure</p> <p>If test results are pending at the time of data collection please complete a.s.a.p.</p> <p>None of these laboratory markers were tested, tick the box if none were measured during this admission</p> <ul style="list-style-type: none"> ▪ C-reactive protein Numerical value e.g. 8.8 Units: mg/L ▪ Ferritin Numerical value e.g. 80 Units: microg/L ▪ Haemoglobin Numerical value e.g. 130 Units g/L

Format continued

- Lymphocyte count
Numerical value e.g. 3.3
- Units: $\times 10^9/L$

Neutrophil count
Numerical value e.g. 6.6
Units: $\times 10^9/L$
- Platelet count
Numerical value e.g. 200
Units: $\times 10^9/L$
- Serum triglycerides
Numerical value e.g. 1.8
Units: mmol/L
- BNP - B-type natriuretic peptide
Numerical value e.g. 1273
Units: pmol/L
- NT-proBNP – NT-proB-type Natriuretic Peptide (ng/L)
Numerical value e.g.157
Units: ng/L or pg/ml (same value for either)
- Troponin I
Numerical value e.g. 2.0
Units: ng/L
- D-dimers
Numerical value e.g. 0.25 or 0.05
Units: microg/mL FEU, microg/mL DDU or ng/ml DDU

Validation rule

Warning if no values entered and box not ticked for 'None of these laboratory markers were tested'

Coinfection

Other respiratory organisms identified by testing

Definition	Identifies the simultaneous presence of one or more other viral and bacterial respiratory pathogens detected during testing. Testing for pathogens may occur during or immediately prior to this paediatric intensive care admission and all positive sample results received after discharge from this PICU admission should be recorded. If No other respiratory organism is identified, tick the box to specify.
Reason	Required to identify the frequency of viral and bacterial respiratory pathogens present in samples tested
Format	Tick all that apply: <ul style="list-style-type: none">▪ No other respiratory organism▪ Adenovirus▪ Human metapneumovirus▪ Influenza▪ Parainfluenza▪ Respiratory syncytial virus▪ Rhinovirus▪ Acinetobacter baumannii▪ Citrobacter freundii▪ Klebsiella pneumonia▪ Mycoplasma pneumoniae▪ Pseudomonas aeruginosa▪ Staphylococcus aureus▪ Streptococcus pneumonia▪ Other respiratory organism (<i>specify</i>)
Validation rule	Warning if value not entered

Other infection

Definition	Records whether any other non-respiratory infection was diagnosed; the site of the infection and the causative pathogen identified. If Other infection is identified specify site and organism, for example Skin, Acinetobacter baumannii.
Reason	To identify the frequency of other non-respiratory infections and the pathogen identified
Format	Free text

Symptoms

Definition	Identifies the clinical features shown by the children who are admitted to PICU. Abdominal pain, anosmia – the loss of the sense of smell, either total or partial, conjunctivitis, cough, diarrhoea, fever - greater than 37.8°C, rash, runny nose, shock, sore throat or other specified symptom.
Reason	Required to understand the occurrence of clinical symptoms identified in this patients treated for COVID-19 in paediatric intensive care.
Format	'Tick' all that apply <ul style="list-style-type: none">▪ No symptoms▪ Abdominal pain▪ Anosmia▪ Conjunctivitis▪ Fever of more than 37.8°C▪ Cough▪ Diarrhoea▪ Fever of more than 37.8°C▪ Rash▪ Runny nose▪ Shock▪ Sore throat▪ Other symptom – <i>specify other symptom in free text box</i>
Validation rule	Warning if value not entered

Imaging

Definition	Records whether an echocardiogram was performed during this admission and whether or not evidence of coronary artery aneurysm(s) was identified.
Reason	To record the use of a diagnostic echocardiogram and the occurrence of coronary artery aneurysm(s) in this cohort of children.
Format	<p>Choose from one of the following:</p> <ul style="list-style-type: none">▪ Yes echocardiogram was performed▪ No echocardiogram was performed <p>If YES an echocardiogram was performed: Was there echocardiographic evidence of coronary artery aneurysm(s)?</p> <ul style="list-style-type: none">▪ Yes▪ No <p>If YES coronary artery aneurysms were detected, record the date of the first echocardiogram when aneurysms were detected: dd/mm/yyyy</p> <p>Was an echocardiogram performed that DID NOT detect evidence of coronary artery aneurysm?</p> <ul style="list-style-type: none">▪ Yes▪ No <p>If YES, an echocardiogram was performed but NO evidence of coronary artery aneurysm(s) was detected record the date of the last echocardiogram performed during this admission: dd/mm/yyyy</p>
Validation rule	Warning if value not entered

Medication

Definition	<p>The medication used to treat a patient diagnosed as COVID-19 positive on laboratory testing.</p> <p>No medication used: none of the medication listed and no other antiviral, antibiotic or immune modulator medication has been used to treat this patient</p> <p>ANTIVIRALS: Inhaled interferon beta-1a, Lopinavir with Ritonavir, Oseltamivir, Remdesivir</p> <p>ANTIBIOTICS: Azithromycin, Ciprofloxacin, Clarithromycin, Co-amoxiclav, Gentamicin, Piperacillin with Tazobactam</p> <p>IMMUNE MODERATORS: Anakinra, Dexamethasone (excluding administration for extubation), Hydroxychloroquine, Intravenous immunoglobulin, Tocilizumab.</p> <p>Other medication (<i>specify name in free text box</i>)</p>
Reason	Required to identify the medication given to the patient

Format	Tick all that apply <ul style="list-style-type: none"> ▪ No medication used ▪ Inhaled interferon beta-1a ▪ Lopinavir with Ritonavir ▪ Oseltamivir ▪ Remdesivir ▪ Azithromycin ▪ Ciprofloxacin ▪ Clarithromycin ▪ Co-amoxiclav ▪ Gentamicin ▪ Piperacillin with tazobactam and if used <ul style="list-style-type: none"> ▪ Other medication (<i>specify name of medication in free text box</i>)
Validation rule	Warning if value not entered and 'No medication used' not ticked

Form completed by

Definition	Name of person completing form.
Reason	For local use only to assist with following up queries relating to completion of this form.
Format	Free text
