



## **Standard Operating Procedures:**

### **Reporting of Multisystem Inflammatory Syndrome in Children (MIS-C) onto Notifiable Medical Conditions Surveillance System using the Electronic Application and Paper Case Report Forms**

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**Reviewed by:**

**Approved by:**

#### **National NMC contact details**

Hotline: 072 621 3805

Fax no: 086 639 1638

Email address: [NMCsurveillanceReport@nicd.ac.za](mailto:NMCsurveillanceReport@nicd.ac.za)

Website: [www.nicd.ac.za](http://www.nicd.ac.za)

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## 1. INTRODUCTION

The first case of coronavirus disease 2019 (COVID-19) was reported on the 31<sup>st</sup> December 2019 by the World Health Organization (WHO) country office following a cluster of pneumonia cases in Wuhan City, Hubei Province of China. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been confirmed as the causative virus of COVID-19, and on the 11<sup>th</sup> of March 2020, WHO declared it as a global pandemic.

Since the start of the pandemic countries have been reporting COVID-19 infections in all age groups. Although limited data suggests that clinical manifestations of COVID-19 are generally milder in children than adults. However, there are reports of a multisystem inflammatory syndrome in children (MIS-C) associated with COVID-19 globally, and more recently in South Africa <sup>1-4</sup>. This syndrome appears to be rare, the children may be unwell, and about half may require intensive care unit (ICU) admission. It is essential to report and characterize this syndrome including clinical presentation, risk factors, severity and outcomes. Therefore, early recognition is crucial. Hence, MIS-C has been defined as a category 1 notifiable condition and clinicians are encouraged to notify these cases.

### **Purpose**

The purpose of this Standard Operating Procedure (SOP) is to outline the process of reporting MIS-C to the Notifiable Medical Conditions Surveillance System (NMCSS).

### **Scope**

This SOP details the roles and responsibilities for reporting MIS-C, and outline the procedures to complete the required case notification forms and case reporting forms.

## 2. RESPONSIBILITIES

### **Public and private health facility level**

According to National Health Act, 61 of 2003<sup>5</sup>, ANY healthcare provider (doctor or nurse) who makes a diagnosis of a category 1 NMC, in this case MIS-C, must immediately report the diagnosis to the health authorities, through the relevant electronic and/or paper based reporting platforms.

### **Expert MIS-C working group**

A group of specialist paediatricians and other experts has been convened to collate and analyse data on MIS-C cases reported through the NMCSS, and send out regular reports to Department of Health and relevant stakeholders.

### 3. PROCEDURES

#### Case Notification

##### Who must report/notify a case of MIS-C?

The healthcare worker responsible for the patient should notify authorities immediately of all probable or confirmed MIS-C cases, using the NMCSS electronic and paper-based platforms, as described in this guideline. The healthcare worker should also update the clinical outcome of the patient if the status changes following notification.

##### Which patient must be notified?

*Probable case:* A person aged 0-19 years meeting the World Health Organization (WHO) case definition of MIS-C (See below)

*Confirmed case:* A person aged 0-19 years meeting the World Health Organization (WHO) case definition of MIS-C (See below)

#### WHO Case definition

The WHO has provided the following preliminary case definition<sup>5</sup>:

Children and adolescents 0–19 years of age with fever  $\geq 3$  days

**AND** two of the following:

1. Rash or bilateral non-purulent conjunctivitis or muco-cutaneous inflammation signs (oral, hands or feet).
2. Hypotension or shock.
3. Features of myocardial dysfunction, pericarditis, valvulitis, or coronary abnormalities (including ECHO findings or elevated Troponin/NT-proBNP),
4. Evidence of coagulopathy (by PT, PTT, elevated d-Dimers).
5. Acute gastrointestinal problems (diarrhoea, vomiting, or abdominal pain).

**AND**

Elevated markers of inflammation such as ESR, C-reactive protein, or procalcitonin.

**AND**

No other obvious microbial cause of inflammation, including bacterial sepsis, staphylococcal or streptococcal shock syndromes.

**AND**

Evidence of COVID-19 (RT-PCR, antigen test or serology positive), or likely contact with patients with COVID-19.

## How to notify?

### 1. Completing the NMC case notification form

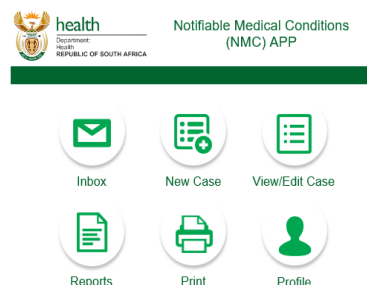
- The healthcare worker who diagnoses MIS-C must immediately report/notify the case using either the NMC electronic Application (mobile or web) or the paper-based NMC case notification form , and complete a paper-based case reporting form for further investigation.

#### *Accessing the NMC electronic App*

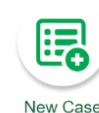
- If you do not have the NMC electronic Application (App) installed on your device, you can access the [NMC web portal](#) or download the [mobile App](#) from NICD website (under the Notifiable Medical Conditions tab). You can also install the NMC mobile App from the Google Play store, for Android devices.
- If it is your first time to use the electronic NMC platform you must create your user profile on the NMC registration page, and receive authorization before using the application. A user registration SOP for the mobile and web application is available on the NICD website. Click here: [NMC Registration page](#).

#### *NMC landing page*

- Login to the NMC App and navigate to the landing page shown in this diagram.



- To capture a new case of MIS-C, click the on the “New Case” icon located on the NMC App landing page. (*nb: before capturing a case, please search the inbox to see if the case already exists in the NMC database.*)



- You will see the following four ‘tabs’ on the “New Case” screen: Facility, Patient details, NMC details/Travel History, Vaccination History/Specimen details

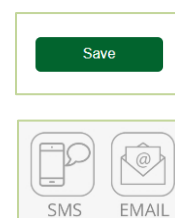


- Complete the 'facility details' and the 'patient details'.

Under the 'NMC details' tab click on the dropdown menu of the 'NMC diagnosed' field, and select "MIS-C"

Complete the rest of the fields.

- Go through each 'tab' and complete all the necessary fields. (n.b. mandatory fields, marked with a red asterisk\* should be completed for every case)
- Click the 'save' button, under the last tab, when you have captured all the details
- You will receive an sms and/or an email acknowledging receipt of the case notification.



#### Completing a paper-based case notification

- In the event that the healthcare worker is unable to access the NMC electronic App, the standard NMC case notification paper form can be used to notify a case of MIS-C. The NMC form is available on NICD website ([Click here](#)).
- Send the completed form by email: [NMCsurveillanceReport@nicd.ac.za](mailto:NMCsurveillanceReport@nicd.ac.za) OR Fax: 086 639 1638 OR to the NMC hotline 072 621 3805.

## 2. MIS-C case reporting form

- In addition to completing the NMC case notification described above, the healthcare worker should also complete an MIS-C case reporting form (CRF). The CRF collects information that is more detailed on each case, which helps the MIS-C expert working group to conduct a detailed clinical and epidemiological investigation and analysis of the MIS-C cases diagnosed in South Africa. The form is available on NICD website ([Click here](#)). The form must be completed thoroughly.
- Send the completed form by email: [NMCsurveillanceReport@nicd.ac.za](mailto:NMCsurveillanceReport@nicd.ac.za) or fax: 086 639 1638 or to the NMC hotline 072 621 3805.
- For any clinical support and queries please contact a group of paediatricians at: [southafricamisc@gmail.com](mailto:southafricamisc@gmail.com).

## References

1. Riphagen S, Gomez X, Gonzalez-Martinez C, Wilkinson N, Theocharis P. Hyperinflammatory shock in children during COVID-19 pandemic. *The Lancet* 2020; **395**(10237): 1607-8.
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6. WHO. Multisystem inflammatory syndrome in children and adolescents temporally related to COVID-19 Scientific Brief. 15 May 2020 2020. <https://www.who.int/news-room/commentaries/detail/multisystem-inflammatory-syndrome-in-children-and-adolescents-with-covid-192020>.

Annexure A: MIS-C Case definition ([Case Definition Category 1](#))

Annexure B: MIS-C case reporting form (CRF) ([Click here](#))

Annexure C: NMC Surveillance System: (Web and Android App ([NMC Registration page](#)))