THE LANCET
Child & Adolescent Health

# Supplementary appendix 1

This appendix formed part of the original submission and. We post it as supplied by the authors.

Supplement to: Gale C, Quigley M A, Placzek A, et al. Characteristics and outcomes of neonatal SARS-CoV-2 infection in the UK: a prospective national cohort study using active surveillance. *Lancet Child Adolesc Health* 2020; published online November 9. http://dx.doi.org/10.1016/S2352-4642(20)30342-4.

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PRU MNHC

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Surveillance of Rare Childhood Disease BPSU

# Neonatal complications of coronavirus disease (COVID-19)

## Data Collection Form - Strictly Confidential

**Please report all eligible babies admitted on or after 1st March 2020 and before 1st April 2021**



## Case Definition:

*(Please tick relevant box. If unable to do so, your case may not fulfil the case definition.)*

Any baby or infant

1. That has a diagnosis of COVID-19 made on a sample taken before 29 days of age and receives inpatient care for COVID-19 (this includes postnatal ward, neonatal unit, paediatric inpatient wards, PICU) ☐

**OR**

2. Where the mother had confirmed COVID-19 at the time of birth or suspected COVID-19 at the time of birth that has subsequently been confirmed, and the baby was admitted for neonatal care (admitted for care on a neonatal unit regardless of the reason for admission and clinical course) ☐

**Please do not include any cases where the COVID-19 diagnosis in baby or mother has not been confirmed by laboratory testing.**

**A follow-up questionnaire may be sent within the first year after notification. Please keep a copy of this form as a record.**

**Version 2.2 (30/04/20)**

**England, Wales and Scotland**

University of Oxford | University of Leicester | Imperial College London | British Association of Perinatal Medicine | University of Nottingham UK | CHINA | MALAYSIA | Public Health England

## Section 1: Reporter details

**1.1** **Date of completion of questionnaire:** D D / M M / Y Y

**1.2** **Consultant responsible for case:** _____

**1.3** **a) Hospital name:** _____

**b) Country:** **England** ☐ **Wales** ☐ **Scotland** ☐

**1.4** **Telephone number:** _____

**Email:** _____

**1.5** **Has the patient been transferred to/from another centre?** Yes ☐ No ☐

**If Yes:**

1) Name of referring centre _____

2) Referring consultant name _____

**1.6** **Name of person completing form (if not 1.2)** _____



## Section 2: Infant case details (If multiple babies complete additional form)

**2.1** **NHS number:** *(or equivalent Scottish CHI)*

**2.2** **Postcode:** *(ONLY include **first half of the postcode** e.g. NG7)* ☐☐☐☐

**2.3** **Sex:** Male ☐ Female ☐

**Date of birth:** D D / M M / Y Y

**Time of Birth:** h h : m m (24hr)

**2.4** **Gestation at birth:** *(e.g. 37+1)* W W + D

**2.5** **Birthweight:** ☐☐☐☐ *g*

**Ethnicity*:** ☐☐ *Specify if any 'Other' background:* _____

**Please choose the correct ethnicity code from Appendix A*

## Section 3: Maternal case details

**Maternal details are essential to allow linkage with the maternal (UKOSS) surveillance**

**3.1 NHS number:** *(or equivalent Scottish CHI or Northern Irish Health & Social Care number)*

**3.2 Hospital name where this baby was delivered** _____

**3.3 Was this mother tested for COVID-19 in the 7 days before or 7 days after birth?**

Yes ☐ No *(Go to Qu. 4.1)* ☐ Unsure ☐

**If Yes,** did this confirm the diagnosis? Yes ☐ No ☐

Sample source: _____

Date first positive sample taken D D / M M / Y Y

If there were further positive samples please give date(s) taken and sample source

1: D D / M M / Y Y Sample Source _____

2: D D / M M / Y Y Sample Source _____

**If Yes,** was the baby separated from the mother following birth? Yes ☐ No ☐

How was this done? _____

## Section 4: Pregnancy/birth details

**4.1 Antenatal steroids given:** None ☐ Partial ☐ Full ☐

**4.2 $MgSO_4$ given:** Yes ☐ No ☐

**4.3 Delivery mode:** *(Please tick one)* Vaginal – spontaneous ☐ Vaginal – forceps/ventouse ☐

Elective C-section ☐ Emergency C-section ☐ Not known ☐

**4.4 Multiple pregnancy:** *(Is there >1 fetus during pregnancy?)*

No ☐ Not known ☐ Yes ☐ **If Yes,** birth order ☐ of ☐

**4.5 Nulliparous:** *(Is this the first pregnancy?)* Yes ☐ No ☐ Not known ☐

**4.6 Apgar score:** at 5 mins ☐ at 10 mins ☐ Not known ☐

**4.7 Lowest cord pH:** *(either arterial or venous)* ☐.☐ Not known ☐

Arterial ☐ Venous ☐ Not known ☐

**4.8 Did mother have any of the following in the 7 days before birth?** *(Please tick Yes/No/Not Known)*

| | Yes | No | Not known |
|---|---|---|---|
| Prolonged rupture of membranes (>24hrs) | ☐ | ☐ | ☐ |
| Meconium stained liquor | ☐ | ☐ | ☐ |
| Fever (>37.8°C) | ☐ | ☐ | ☐ |

**4.9 Did the baby require any of the following at birth?** *(Please tick Yes/No/Not Known)*

| | Yes | No | Not known |
|---|---|---|---|
| Inflation/ventilation breaths | ☐ | ☐ | ☐ |
| Intubation | ☐ | ☐ | ☐ |
| Chest compressions | ☐ | ☐ | ☐ |
| Resuscitation drugs | ☐ | ☐ | ☐ |

## Section 5: Infant presentation/clinical features

**5.1 Where did the baby receive medical care?**

Neonatal unit ☐ PICU ☐ Paediatric ward ☐ Postnatal ward ☐

**5.2 Was this baby tested for COVID-19?** Yes ☐ No *(Go to Qu. 5.6)* ☐ Unsure ☐

**If Yes,** did this confirm the diagnosis? Yes ☐ No ☐

For each test performed for COVID-19, please state the source, date and result

| | Sample source *(e.g. cord blood, NPA, stool)* | Positive | Negative | Time taken | Date taken |
|---|---|---|---|---|---|
| 1. | | ☐ | ☐ | h h : m m (24hr) | D D / M M / Y Y |
| 2. | | ☐ | ☐ | h h : m m (24hr) | D D / M M / Y Y |
| 3. | | ☐ | ☐ | h h : m m (24hr) | D D / M M / Y Y |
| 4. | | ☐ | ☐ | h h : m m (24hr) | D D / M M / Y Y |
| 5. | | ☐ | ☐ | h h : m m (24hr) | D D / M M / Y Y |

**5.3 If COVID-19 positive, did the baby have any signs?** Yes ☐ No ☐

**If Yes,** date of onset of signs of COVID-19 D D / M M / Y Y

**5.4 If COVID-19 positive, did the baby have immediate family or close contacts with sign/symptoms of COVID-19 when diagnosed?** Yes ☐ No ☐ Unsure ☐

**If Yes,** who? _____

**5.5 If COVID-19 positive, do you think the baby** acquired this in hospital (nosocomial)? Yes ☐ No ☐

**5.6 Reason for admission** _____

**5.7 Did the baby have any of the following signs?** *(Please tick Yes/No/Not Known)*

| | Yes | No | Not known |
|---|---|---|---|
| Hyperthermia (>37.5°C) | ☐ | ☐ | ☐ |
| Hypothermia (<36.5°C) | ☐ | ☐ | ☐ |
| Apnoea | ☐ | ☐ | ☐ |
| Cough | ☐ | ☐ | ☐ |
| Coryza | ☐ | ☐ | ☐ |
| Tachypnoea | ☐ | ☐ | ☐ |
| Respiratory distress/recession | ☐ | ☐ | ☐ |
| Oxygen requirement | ☐ | ☐ | ☐ |
| Lethargy | ☐ | ☐ | ☐ |
| Hypotonia | ☐ | ☐ | ☐ |
| Seizures | ☐ | ☐ | ☐ |
| Poor feeding/vomiting | ☐ | ☐ | ☐ |
| Diarrhoea | ☐ | ☐ | ☐ |
| Hypoglycaemia | ☐ | ☐ | ☐ |
| Rash | ☐ | ☐ | ☐ |
| Asymptomatic | ☐ | ☐ | ☐ |

**If Other,** please specify: _____

**5.8 Other key investigations** *(use first result from point of suspicion/diagnosis of COVID-19 or following admission related to COVID-19)*

Chest X-Ray performed? Yes ☐ No ☐ Date D D / M M / Y Y

Findings: Normal ☐ Pneumonia ☐ Ground glass ☐

**If Other,** please state: _____

Blood tests performed:

| | | Positive | Date taken |
|---|---|---|---|
| Haemoglobin | _____ | (g/L) | D D / M M / Y Y |
| WBC | _____ | ($10^9$/L) | D D / M M / Y Y |
| Neutrophils | _____ | ($10^9$/L) | D D / M M / Y Y |
| Lymphocytes | _____ | ($10^9$/L) | D D / M M / Y Y |
| Platelets | _____ | ($10^9$/L) | D D / M M / Y Y |
| ALT | _____ | (U/L) | D D / M M / Y Y |
| CRP | _____ | (mg/L) | D D / M M / Y Y |
| Lactate | _____ | (mmol/L) | D D / M M / Y Y |

**If Other,** please specify: _____

_____

## Section 6: Other diagnoses and investigations

**6.1 Did the baby have any major congenital abnormalities?** Yes ☐ No ☐ Not known ☐

**If Yes,** please provide details: _____

**6.2 Was neuroimaging performed?** Yes ☐ No *(Go to Qu. 6.3)* ☐ Not known ☐

**If Yes,** were any of the following identified? **If Yes,** please state modality and date first identified:

| Finding | Modality | Date first identified |
|---|---|---|
| Normal | Cr USS ☐ MRI ☐ | D D / M M / Y Y |
| Grade I/II IVH | Cr USS ☐ MRI ☐ | D D / M M / Y Y |
| Grade III/IV IVH | Cr USS ☐ MRI ☐ | D D / M M / Y Y |
| Cystic periventricular leukomalacia (PVL) | Cr USS ☐ MRI ☐ | D D / M M / Y Y |
| Hypoxic-ischaemic injury | Cr USS ☐ MRI ☐ | D D / M M / Y Y |
| Congenital structural anomaly | Cr USS ☐ MRI ☐ | D D / M M / Y Y |

**6.3 Please indicate if any of the following tests were performed:**

| | Yes | No | Date | Result |
|---|---|---|---|---|
| EEG or CFAM: | ☐ | ☐ | D D / M M / Y Y | Normal ☐ Seizures ☐ Other: _____ |
| Echocardiogram: | ☐ | ☐ | D D / M M / Y Y | _____ |

## Section 7: Treatment/management of infant Only for infants who are COVID-19 positive

**7.1 Please indicate if any of the following treatments were given for the treatment of COVID-19** *(Please tick Yes/No/Not Known)*

| | Yes | No | Not known | Start date | End date |
|---|---|---|---|---|---|
| Oxygen | ☐ | ☐ | ☐ | D D / M M / Y Y | D D / M M / Y Y |
| Non-invasive ventilation | ☐ | ☐ | ☐ | D D / M M / Y Y | D D / M M / Y Y |
| Invasive ventilation | ☐ | ☐ | ☐ | D D / M M / Y Y | D D / M M / Y Y |
| HFOV | ☐ | ☐ | ☐ | D D / M M / Y Y | D D / M M / Y Y |
| Nitric oxide | ☐ | ☐ | ☐ | D D / M M / Y Y | D D / M M / Y Y |
| Therapeutic hypothermia | ☐ | ☐ | ☐ | D D / M M / Y Y | D D / M M / Y Y |
| ECMO | ☐ | ☐ | ☐ | D D / M M / Y Y | D D / M M / Y Y |

**7.2 Please indicate if any of the following treatments were given at the time of COVID-19 infection:** *(Please tick Yes/No)*

| | Yes | No | Start date | Name of medication(s) |
|---|---|---|---|---|
| Antibiotics | ☐ | ☐ | D D / M M / Y Y | |
| Antivirals | ☐ | ☐ | D D / M M / Y Y | |
| Postnatal steroids | ☐ | ☐ | D D / M M / Y Y | |
| Anti-arrhythmic treatment | ☐ | ☐ | D D / M M / Y Y | |
| Immunoglobulin | ☐ | ☐ | D D / M M / Y Y | Not applicable |
| Other experimental therapy | ☐ | ☐ | D D / M M / Y Y | |

**7.3 Do you think COVID 19 was predominantly responsible or significantly contributed to this neonates illness?** Yes ☐ No ☐

## Section 8: Outcome of infant

**8.1 What was the final outcome?** *(Please tick all that apply)*

| | | Date of event | |
|---|---|---|---|
| Discharged home: | ☐ | D D / M M / Y Y | |
| Transferred *(e.g. another hospital)*: | ☐ | D D / M M / Y Y | |
| Still admitted: | ☐ | D D / M M / Y Y | ***Questionnaire completed*** |
| Died: | ☐ | D D / M M / Y Y | |
| Not known: | ☐ | Not applicable | ***Questionnaire completed*** |

**8.2 If discharged home, please indicate if any of the following are continued on discharge.**

| | Yes | No | Not known |
|---|---|---|---|
| Home oxygen: | ☐ | ☐ | ☐ |
| Home pressure ventilatory support (CPAP or IPPV): | ☐ | ☐ | ☐ |
| For palliation: | ☐ | ☐ | ☐ |
| Community nursing: | ☐ | ☐ | ☐ |

**If discharged home,** please indicate if any of the following follow up are organised.

| | | | |
|---|---|---|---|
| Follow up in clinic: | ☐ | ☐ | ☐ |

**8.3 If transferred, location transferred to:** _____

**8.4 If baby died, was a post-mortem (PM) performed?** Yes ☐ No ☐

**If Yes,** was evidence of COVID-19 infection found on PM? Yes ☐ No ☐

Please give brief details: _____

## Thank you for taking the time to complete the Questionnaire

**Please return the completed form via NHS.net email to:**

**orh-tr.mbrrace@nhs.net**

**Telephone: 01865 289733**

## Appendix A: Coding for Ethnic Group (ONS 2011 for UK wide data collection)

| | | Ethnicity Code | |
|---|---|---|---|
| **A** | **White** | **1** | English / Welsh / Scottish / Northern Irish / British |
| | | **2** | Irish |
| | | **3** | Gypsy or Irish Traveller |
| | | **4** | Any other White background, please write ***in Section B/C*** |
| **B** | **Mixed/ Multiple Ethnic Groups** | **5** | White and Black Caribbean |
| | | **6** | White and Black African |
| | | **7** | White and Asian |
| | | **8** | Any other Mixed / Multiple ethnic background, please write ***in Section B/C*** |
| **C** | **Asian / Asian British** | **9** | Indian |
| | | **10** | Pakistani |
| | | **11** | Bangladeshi |
| | | **12** | Chinese |
| | | **13** | Any other Asian background, please write ***in Section B/C*** |
| **D** | **Black / African / Caribbean / Black British** | **14** | African |
| | | **15** | Caribbean |
| | | **16** | Any other Black / African / Caribbean background, please write ***in Section B/C*** |
| **E** | **Other ethnic group** | **17** | Arab |