# **Following the data** – learning from cases of the delta variant in Glasgow

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## Introduction

Since emerging in 2019, SARS-CoV-2 has mutated repeatedly giving rise to new variants. The delta variant became dominant in the United Kingdom in May 2021. We describe the characteristics of patients admitted to hospital and testing positive for SARS-CoV-2 in two obstetric units in the West of Scotland (annual deliveries ~8500).

## Methods

Caldicott guardian approval was obtained and ethical review waived by the West of Scotland research ethics service. Obstetric patients admitted to Princess Royal Maternity, Glasgow, and Royal Alexandra Hospital, Paisley, from 1 May 2021 to 30 November 2021 and who tested positive for SARS-CoV-2 were included.

## Results

Sixty-six women tested positive for SARS-CoV-2 and were admitted to hospital: 42/66 (64%) had COVID-19 as the primary diagnosis and 24/66 (36%) were admitted for other reasons. Of the women requiring oxygen, 26 received steroids and 14 received anti-IL6 therapies.

| | N = 42 |
|---|---|
| Age (years) | 30 (26 – 33) |
| Gestation at SARS-CoV-2 diagnosis (weeks) | 29 (25 – 34) |
| Any oxygen administered to maintain SpO2 >94% | 27 (64%) |
| Admitted to critical care unit | 15 (35%) |
| Intubation and positive pressure ventilation | 7 (17%) |
| Delivered during hospital admission | 19 (45%) |
| < 30 weeks gestation | 5 (12%) |
| ≥ 30 weeks gestation | 14 (33%) |
| Location at delivery | |
| Delivery suite | 15 (36%) |
| Critical care unit or main theatres | 4 (10%) |

## Summary infographics
shared widely within MDT

COVID-19 May - Nov Delta variant

42 admissions due to COVID-19

Almost 2/3 required oxygen

>1 in 2 of those on any oxygen were admitted to ICU

All but two women on >4L O2 were admitted to ICU

>40% of ICU admissions were intubated

>1 in 2 ICU admissions were delivered

RED FLAGS
ANY O2 REQUIREMENT
CONFUSION / AGITATION
HYPOTENSION
>4L O2 ➡ DISCUSS WITH ICU

## Data-driven changes
to local escalation plans

| Alert | IF… | THEN… |
|---|---|---|
| **Green** | $SpO_2$ <94% on **air** ***and*** RR ≤ 24 | 1. Start **2** litres nasal $O_2$<br>2. Inform anaesthetist<br>3. Consider ICU discussion*<br>4. Commence steroids |
| $SpO_2$ ≥ 94% on 2l nasal $O_2$ ***and*** RR < 24 → observations at least every 1 hr | | |
| **Yellow** | $SpO_2$ <94% **2l** nasal $O_2$ ***or*** RR ≥ 25<br>*If rapidly increasing $O_2$ requirements move directly to Red Alert level* | 1. Start **4** litres nasal $O_2$<br>2. **Urgent** anaes/obs review<br>3. Check ABG (± A line)<br>4. Discuss with **ICU***<br>*Consider humidified mask $O_2$ up to 35% if prolonged therapy* |
| $SpO_2$ ≥ 94% on 4l nasal $O_2$ ***and*** RR < 30 → observations at least every ½ hr | | |
| **Red** | $SpO_2$ <94% **4l** nasal $O_2$ or **35%** humidified mask ***or*** RR ≥ 30 | 1. Titrate humidified $O_2$ by facemask $SpO_2$ ≥94%<br>2. **Immediate** anaes/obs review<br>3. Check ABG (± A line)<br>4. **Immediate ICU referral** |
| **Life Threatening**<br>**Life Threatening** | Rapidly rising $O_2$ requirements ***or*** RR<br>Disorientated ***or*** Agitated ***or*** Obtunded | |

## Shared learning events
to discuss cases and highlight good practice

delivery in ICU · case numbers · complications · therapeutics

## Discussion

In keeping with recent reports from the United Kingdom Obstetric Surveillance System (UKOSS) [1], we report high rates of oxygen therapy and critical care unit admission during the delta wave of the SARS-CoV-2 pandemic.

Compliance with steroid and IL-6 therapies was high and in keeping with national guidelines.[2]

Contemporaneous data collection and analysis allowed for early recognition of the increased severity of illness and the rapid local development of enhanced patient pathways to improve transition of care between critical care and maternity units, particularly in the high-risk group of patients requiring > 4 litres of oxygen. Emergent deliveries performed in the critical care unit prompted development of standard operating procedures and inter-disciplinary education using simulated scenarios. Ongoing surveillance of maternal outcomes during the SARS-CoV-2 pandemic is required.

**References:** (1) Vousden N, Ramakrishnan R, Bunch K, et al. Impact of SARS-CoV-2 variant on the severity of maternal infection and perinatal outcomes: Data from the UK Obstetric Surveillance System national cohort. MedRxiv 2021. Doi: 10.1101/2021.07.22.21261000.
(2) Royal College of Obstetricians and Gynaecologists. Coronavirus (COVID-19) Infection in Pregnancy. 14.3. 2022.