

# COVID-19 surveillance swabbing in a tertiary NICU



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Like other neonatal units around the world, COVID-19 raised many questions for us about personal protective equipment, parental presence, and how best to cohort babies in the neonatal intensive care unit (NICU). There is limited guidance on the use of routine swabbing to guide practice in neonatal care. However, as we were caring for a group of very vulnerable patients, it was felt that regular surveillance would provide the assurance to staff and parents that the unit remained safe and COVID-19 free. With the support of the Clinical Virology and Infection Prevention Control teams, we instituted twice weekly surveillance swabbing for those babies who were deemed high-risk, ie all of our babies who were undergoing aerosol-generating procedures.

We audited the COVID-19 tests performed over a 10-week period between 1 May 2020 and 10 July 2020. Inborn babies were not routinely swabbed as expectant mothers in labour had rapid swabs taken in line with NHS England guidance<sup>1</sup> for testing non-elective admissions. This meant that for the majority of cases, we were aware of maternal COVID-19 results before babies were admitted to the neonatal unit.

A total of 464 tests were undertaken. These were predominantly surveillance swabs (n=350) but also included swabs or secretions sent following external admission (n=23), swabs taken when inborn babies' mothers' status was

unknown (n=55), pre-operative testing (n=6), swabs taken due to clinical deterioration (n=10) and reasons listed as 'other' (n=20).

Out of the 464 COVID-19 tests undertaken, we had three positive results, detailed in **TABLE 1**.

With the benefit of hindsight, we understand a bit more about the relevance of sample size and type, and that PCR (polymerase chain reaction) testing does not always provide a black-or-white result. Results need to be interpreted in tandem with the clinical picture and progression, and actions should always lie on the side of suspicion when there is so much at stake.

With these babies, we took the cautious approach of isolating until multi-professional conclusion was reached, even though this caused some distress to their parents. We feel that our surveillance swabbing experience in the NICU during this global pandemic is quite unique, and we have gained much from the assurance that the almost-entirely negative findings have allowed. For now, we continue once-weekly surveillance swabbing for COVID-19, using it to guide our practice during these unprecedented times.

## Reference

1. **NHS England**. Operating framework for urgent and planned services in hospital settings during COVID-19. May 2020, version 1, available at: [www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/05/Operating-framework-for-urgent-and-planned-services-within-hospitals.pdf](http://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/05/Operating-framework-for-urgent-and-planned-services-within-hospitals.pdf)

### 1. Baby A

Born at 25<sup>+2</sup> weeks' gestation, 219 days old, 5Kg and ventilated, with multiple co-morbidities. A routine surveillance nose and throat swab was positive, but all subsequent samples were negative and the positive result was later confirmed to be that of another patient; the result of human error.

### 2. Baby B

Born at 32 weeks' gestation, 43 days old, 2Kg and on nasal continuous positive airway pressure (nCPAP) with multiple co-morbidities. A routine surveillance nose and throat swab was positive with a low viral load, but all subsequent samples were negative. The baby was clinically unstable, and as we could not exclude true COVID-19 infection, he spent 14 days in isolation.

### 3. Baby C

Born at 22<sup>+6</sup> weeks' gestation, 41 days old, 970g and ventilated. Endotracheal secretions (nasal pharyngeal aspirates, NPA) sent when the baby was pyrexia were weakly positive, but subsequent NPA samples were negative, and the result was eventually viewed as a false positive.

**TABLE 1** Three out of 464 COVID-19 tests were positive.