

BRIEF REPORT

Italian neonatal transport changed during the pandemic due to some hospitals being re-designated for COVID-19 cases

COVID-19 has had a significant impact on Italian health care, including perinatal care. We describe the effects on the Italian neonatal emergency transport system (NETS) from the first lockdown in March 2020 to the end of December 2020.

The Neonatal Transport Study Group of the Italian Society of Neonatology conducted a national survey on NETS activity in 2020 from February 2021 to May 2021. This updated data from the 2019 and 2018 surveys¹ and asked questions about the effect of the COVID-19 pandemic. Demographic data were obtained from the Italian National Institute of Statistics.

During the first Italian lockdown, from 9 March 2020, maternity wards closed if they were in hospitals that were only treating COVID-19 patients. At the same time, reference centres were set up for pregnant women who had tested positive for the virus or were highly likely to have been infected. Virus-positive pregnancies were mostly concentrated in adult hospitals that did not always have tertiary neonatology units, as paediatric hospitals needed to be COVID-19-free. If a newborn infant was born to a virus-positive mother, but they both remained healthy, they were kept together in an isolation room. Neonatal transport was activated if the infant started to display COVID-19 symptoms or needed to be moved to a neonatal intensive care unit. This hospital reorganisation led to unavoidable changes. For example, it was not always possible to provide tertiary obstetric care and neonatal care together and more than a quarter of infants born to mothers with COVID-19 needed NETS transfers.

This study compares the 2020 data collected in 2021 and the 2018 data collected in 2019. The 2021 survey comprised 20 multiple-choice questions. These included the type of organisation, policies for quality evaluation, training and education and the NETS vehicles used, such as helicopters. Activity data included questions on the total annual, primary, intertertiary and back transports, and NETS transports. We also asked about the number of neonates transferred at less than 30 weeks of gestational age, between 30 and 34 weeks and over 28 days of life or 44 weeks of corrected gestational age for preterm infants. The average time for each transport was also recorded. Specific COVID-19 questions included the total number of transports for neonates born to virus-positive mothers and neonates who were virus-positive, including those over 28 days of life or 44 weeks of corrected gestational age for preterm infants.

Table 1 compares the main data for both years. The latest response rate was 100% both surveys, as all 55 NETS units responded. All 55 NETS said they guaranteed round-the-clock coverage 365 days a year. In 2020, NETS transported 6112 infants. Table 1 reports the Neonatal Transport Index (NTI),^{2,3} which was the number of neonates transferred per 100 live births, excluding back transports. It also provides specific data on COVID-19 cases. From March to December 2020, the Italian NETS transported 5679 newborns, of which 248 were born from virus-positive mothers, while further 20 were born from negative mothers, then becoming positive within the first month of life. We did not observe mother-and-child positive. We excluded six virus-positive infants over 28 days of life or 44 weeks of corrected gestational age, who were not included in the data, and back transports. Official Government figures state that there were 976 virus-positive deliveries from March to December 2020.

The overall NTIs for 2018 and 2020 were virtually unchanged at 1.39% and 1.37%, which was well within the target of 2%.^{2,3} This indicated that COVID-19 had not led to significant changes in the regionalisation of perinatal care in Italy. This conclusion is further supported by the data on preterm infants up to 34 weeks of gestational age from 2018 and 2020. This showed that there were 962 and 784 transports in 2008 and 2020, namely 19.6% and 16.4% of the total number each year, which was statistically significant ($p = 0.005$). However, the higher percentage in 2018 confirms that COVID-19 only had a partial impact on NETS' activity in Italy. The regionalisation of perinatal care has generally withstood the pandemic very well, despite initial issues during the first phase of the pandemic in March to June 2020, when COVID-19 had a large impact on Italy. The changing face of neonatal transport was a consequence of these initial difficulties.^{4,5} NETS is a niche area, particularly when we look at the devastating impact the pandemic has had on public health. We believe that Italian NETS have addressed the COVID-19 pandemic as positively and effectively as they could have done in such demanding circumstances.

The finding that more than a quarter of NETS transports were related to COVID-19 appears to have been due to the reorganisation of adult hospitals during the pandemic and not to any failing of health services or the regionalisation of Italian perinatal care.

TABLE 1 Italian Neonatal Transport Activity Survey 2018 and 2020. Impact of COVID-19 pandemic

	Primary Transports	Intertertiary Transports	Back Transports	Total Transports	NTI (Back excluded)	Live births
2018 activity (365 days)	4901	951	612	6464	1.39%	439,747
2021 activity (365 days)	4542	1021	549	6112	1.37%	404,104
2021 activity (Mar–Dec)	3804	813	462	5679	1.37%	336,792
2021 activity COVID-related (Mar–Dec)	COVID Primary Transports Positive mother 248	COVID Intertertiary Transports Positive newborn 0	COVID Back Transports 0	COVID Total Transports 268	COVID NTI (Back excluded) 27.4%	Live Births COVID related pregnancies 976

Note: COVID primary transports were split in positive mother (ie number of newborns who were transported owing to birth by positive mother) and positive newborn (ie the newborns who were negative at birth but became positive within their first month of life). We did not observe mother-and-child positive.

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CONFLICT OF INTEREST

None.

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