

## Timely Presence of Mother with their Newborns on Admission to PICU

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### Abstract

#### Aims

The PICU in CHI at Crumlin has frequent neonatal admissions from maternity hospitals nationwide. Often their mothers are unable to visit for >24 hours. The maternal-infant bonding process is disrupted which can have long term developmental and psychological sequelae.

#### Methods

A retrospective study to determine factors limiting maternal presence following PICU admission of their newborn. Electronic records of all neonates admitted to PICU over a 24-month period were accessed and data extracted relating to reason for admission, source of admission, timing of first maternal visit and potential influencing factors.

#### Results

247 neonates were admitted, 30% with no antenatal diagnosis. 181 (73%) had a maternal visit within 24 hours, while 7 infants (2.8%) had no visit for >72 hours.

#### Discussion/Conclusion

Timing of first maternal visitation is reassuring for many cases, but a substantial proportion require improvement. Promotion of early maternal-infant contact and supporting maternal involvement is an important therapeutic aim.

## **Introduction**

The PICU in CHI at Crumlin has frequent neonatal admissions from maternity hospitals nationwide. Often the mothers of these babies do not visit until 24 hours or more after delivery. The maternal-infant bonding process may be disrupted which could have long term developmental and psychological sequelae. If ventilatory support or invasive procedures are required at delivery, mothers of critically unwell neonates may not get to hold their newborn prior to transfer to PICU. This disrupts opportunities for skin-to-skin contact which has been shown to have benefits in relation to neurobehavioural outcomes for the neonate and improved breastfeeding rates. Early separation may negatively affect the early mother-infant relationship and may compromise the development of attachment during the first year of the infant's life.

## **Methods**

Following ethical approval, the electronic patient records for all neonates < 1 week old admitted to PICU in CHI at Crumlin over the period January 2019 - December 2020 were accessed. The timing of first maternal visit was determined based on documentation by medical or nursing staff. This information was located in nursing notes, usually with details of the reason for delayed maternal visitation. The originating hospital and reason for admission to PICU was documented. We also noted mode of delivery and urgency of delivery. In cases of caesarean section, the method of anaesthesia was recorded (GA or neuraxial block) to investigate if there is any correlation with delayed maternal presence.

## **Results**

From 1<sup>st</sup> January 2019 to 31<sup>st</sup> December 2020, 247 newborns (141 male, 106 female) were admitted to PICU in CHI at Crumlin. 46% (113) were admitted during working hours. 80% (198) were of term gestation and 37% (91) admitted on day of life zero. Highest referral site was from within CHI at Crumlin (44%, 109/247) and 15% (36) from the National Maternity Hospital. 1.6% (4) were referred from Northern Ireland. The most common mode of delivery was emergency caesarean section comprising 31% (76) of deliveries. The majority of admissions were cardiac in origin; 125 (51%), followed by GI including bowel/oesophageal abnormalities; 51 (21%), and congenital diaphragmatic hernia; 28 (11%). Timings of maternal visitation were overall positive with 73% (181) of newborns visited within 24 hours (Figure A). Over half (57%, 140/247) of newborns were fed with breastmilk, 22% (55) formula fed, 15% (36) NPO/TPN fed and in 6% (15) cases nutritional intake was not documented.

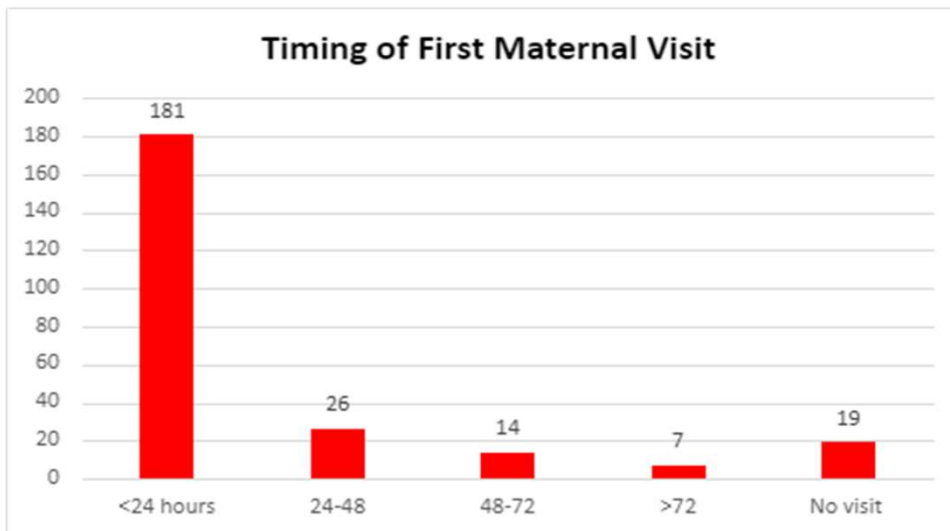


Figure A: Timing of first maternal visit. Note category of 'no visit' subdivides: 32% (6) were documented as having mothers who remained as inpatients in the referring hospital, 42% (8) were <24 hours in PICU.

## Discussion

For infants requiring PICU admission following birth, the parent-child relationship begins in PICU. Early maternal-infant bonding is considered essential in supporting children's development, emotional regulation and later cognitive and social development.<sup>1</sup>

27% of infants had no maternal presence during the first 24 hours of their admission. A significant proportion had mothers who remained as inpatients in maternity hospitals nationwide and were unable to visit.

Mothers of infants admitted to PICU experience disproportionately increased levels of maternal psychological stress.<sup>2</sup> Anxiety and depression are commonplace secondary to early separation from her infant and an inability to perform routine parenting activities. Feelings of inadequacy are compounded by the absence of early skin to skin and breastfeeding opportunities.<sup>3</sup> Models of family-centred care include shared decision making, promoting parental confidence in care of the infant and providing support for the family throughout PICU admission.<sup>4</sup>

The PICU environment is an overwhelming one for parents who are oftentimes struggling to come to terms with a premature delivery or congenital pathology. A percentage of infants have a normal antenatal course and a PICU admission is unexpected. Whilst delivery of all infants with an antenatal diagnosis in a nearby maternity hospital could make early maternal visiting more feasible, this would challenge capacity of these hospitals. Travelling long distances for antenatal care may also be impractical and unmanageable for many expectant mothers.

Timely maternal visiting to the PICU, physical contact with the infant if possible and involvement in care decisions are crucial to the physical, emotional and social well-being of both the infant and the mother.

**Declaration of Conflict of Interest:**

The authors have no conflicts of interest to declare.

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