the dearth of products licensed for the neonatal population necessitates the routine use of these medicines.[1] Various studies have shown that the use of unlicensed and off-label medicines is common in a neonatal intensive care setting: in the UK in 1999,[2] and more recently in Brazil[3] and Norway.[4]

**Aim** Prospectively record the license status of medicines prescribed on a tertiary neonatal unit to determine the relative numbers of licensed, off-label and unlicensed medicines administered.

**Method** Medication prescription charts were reviewed for a four-week period on a tertiary regional neonatal unit. Each medicine prescribed was recorded and the license status determined, taking into account the indication, patient characteristics and formulation used. Information was gathered on the number of different drugs used and the number of patients that they were prescribed for.

**Results** Over the study period a total of 72 distinct medications were prescribed 404 times for 68 patients. Of the 404 prescriptions analysed during the study period, just over half (53%) were licensed medicines being used within their licensed indication. 31% were licensed medicines being used off-label and 15% were unlicensed medicines. 43% of the 72 medicines used were licensed but being used off-label. 36% were licensed medicines being used within their licensed indication and 21% of medicines were unlicensed. Of the licensed medicines being used off-label, the most common reason was that the indication/age was not covered by the summary of product characteristics (SPC). However, the detail given in the SPCs varied greatly and it was often challenging to determine whether specific uses were within the license. The top 3 most commonly prescribed medicines (gentamicin, benzylpenicillin and caffeine citrate) accounted for 29% of all prescriptions recorded and were all being used within their license.

**Conclusion** This study found that the majority (64%) of medicines used in neonatal intensive care during the study period were unlicensed or off-label, similar to other recent work in neonates.[3] However, when analysed by the number of prescription events, the majority of these (53%) were licensed. This was mainly due to a small number of licensed drugs which are used often, including antibiotics and caffeine citrate. A licensed form of caffeine citrate was released in 2012, which may partly explain why the proportion is higher in this study than Conroy et al in 1999 [2] who found only 35.4% of prescriptions were licensed. While this is a trend in the right direction, more work is needed to license medicines specifically for this vulnerable group of patients.

## REFERENCES


1. Rawlence E, Lowey A, Tomlin S, *et al*. Is the provision of paediatric oral liquid unlicensed medicines safe?. *Arch Dis Child Educ Pract Ed* 2018;**103**:310.
2. Conroy S, McIntyre J, Choonara I. Unlicensed and off label drug use in neonates. *Arch Dis Child Fetal Neonatal Ed* 1999;**80**:F142–145.
3. Costa HT, Costa TX, Martins RR, *et al*. Use of off-label and unlicensed medicines in neonatal intensive care. *PloS One* 2018;**13**:e0204427.
4. Teigen A, Wang S, Truong BT, *et al*. Off-label and unlicensed medicines to hospitalised children in Norway. *J Pharm Pharmacol* 2017;**69**:432–438.


## P18 PRESCRIBING ERRORS IN PICU: IDENTIFYING PREVALENCE BY DRUG AND ERROR TYPE

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**Context** Patient safety is a priority for healthcare organisations worldwide and is a key factor in providing high quality healthcare. Prescribing medications correctly is critical to ensuring safety, especially in the setting of a Paediatric Intensive Care Unit (PICU) where patients are vulnerable to being exposed to incidents due to highly complex care and illness severity. In our 21 bedded PICU, any prescribing errors detected by critical care pharmacists are recorded on a prescribing error database each day (Microsoft Access). Information inputted includes the drug involved in the error, the route of administration, prescriber identifier number, type of error and category of error based on the NCC MERP[1] classification system. Information is extracted monthly from this database to further populate a prescribing errors dashboard, highlighting the total number of prescribing errors each month and sub-categorising the number of errors according to drug cause and error type.

Data collected in 2021 was analysed by our Trust's Quality Improvement (QI) Team who generated pareto charts for the highest reported prescribing errors according to drug and error type. Although pharmacist data showed that many drugs were responsible for prescribing errors, pareto analysis by the QI team identified that Teicoplanin, Heparin, Fentanyl, Chloral Hydrate and Octenisan® were the drugs associated with the most frequent number of errors and causing the biggest cumulative impact on our prescribing error data. In terms of error type, pareto analysis identified that 80% of our cumulative errors were attributed to the wrong route, wrong dose or missing route of administration.

**Conclusion** A pareto chart is a graph that indicates the frequency of defects as well as their cumulative impact. By applying this statistical control process to PICU prescribing error data for 2021, we were able to identify the drugs and error types responsible for the majority of our cumulative errors. Using the 'Brilliant Basics' methodology,[2] we followed a two-step approach in dissecting our data. For step one, we analysed the data that we had and then in step two, using this analysis, we were able to agree and introduce measures to our prescribing systems in order to mitigate the risk of the errors re-occurring. These measures have included redesigning our PICU prescription to add or adapt prescribing recommendations for Teicoplanin, Heparin and Fentanyl, updating prescribing advice in our PICU electronic drugs formulary for Chloral Hydrate and placing an additional daily task on our nurses' electronic task list to ensure Octenisan® is used. In terms of error type, we have raised awareness of the prevalence of the errors causing the biggest impact on reported prescribing errors, through the medium of pharmacy newsletters, which are disseminated to all PICU staff and by educating new PICU prescribers as part of their induction to the unit. To assess whether the above changes have contributed to an improvement in our reported errors by drug and type, we will continue to perform statistical analysis on prescribing data collected throughout 2022.

## REFERENCES


1. National Coordinating Council for Medication Error Reporting and Prevention. 2001. http://www.nccmerp.org/types-medication-errors Accessed 14 June 2022.
2. A Catalyst for Better Health Strategy 2019/22. NHS Business Services Authority (V1) 03 2019. https://www.nhsbsa.nhs.uk/sites/default/files/2019-04/Strategy%202019-22%20%28V1%29%2003.2019.pdf