Interruption of high flow nasal oxygen during transfer

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PATIENT SAFETY
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A safety critical National Patient Safety Alert has been issued on the risk of harm from interruption of high flow nasal oxygen (HFNO) during transfer. This alert relates to the risk of harm caused by the interruption of HFNO to babies, children and adults in acute respiratory failure without hypercapnia during patient transfer.

Some HFNO delivery devices have a transport mode, but most require mains power and will not deliver oxygen during transfer unless attached to a compatible uninterruptible power supply (UPS) device. In the context of this alert, transfer means between wards, departments and rooms within a hospital; HFNO is not used for ambulance transfer between hospitals.

The alert asks providers to add clear labels to HFNO delivery devices to make staff aware that even brief interruptions to mains power supply could lead to respiratory and cardiac arrest; and that HFNO in any emergency department or short stay unit must not be started without a plan for how to transfer the patient onwards.

Where a UPS is used, action must be taken on the storage and maintenance of UPS devices to ensure they are ready for use and staff know where to locate them.

A review of patient safety incident data identified four deaths in a recent two-year period from interrupted HFNO during patient transfer. Further reports described hypoxia, cyanosis, collapse and respiratory arrest. Patients affected ranged from age one month to 85 years, but most incidents occurred in those aged one month to one year and 66-75 years. The review of these incidents suggests:

- some staff may assume devices have an internal battery
- staff do not realise how rapidly the patient is likely to deteriorate with even brief interruption of HFNO
- a misconception is that less intensive methods of oxygen delivery (eg reservoir masks with an oxygen cylinder on full flow) are an adequate substitute during transfer; however, most patients requiring HFNO need more intensive intervention such as intubation if HFNO is interrupted
- staff have no obvious visual cue to the criticality of HFNO and may confuse it with low-flow nasal oxygen
- emergency departments starting a patient on HFNO then find they have no access to a supplementary battery source or transport mode to move the patient safely out of the department.

A number of immediate actions are required to reduce the risk of harm:

1. Identify all devices used to provide HFNO that do not have an in-built transport mode
2. Add clear and visible labels to these HFNO delivery devices stating:
   a. even brief interruptions to mains power supply will lead to interruption of oxygen therapy and subsequent respiratory or cardiac arrest
   b. do not start HFNO in any emergency department or short stay unit without a plan for how to transfer the patient onwards.
3. If you already have UPS devices to use with HFNO:
   a. identify a storage place for your UPS that can be accessed 24/7
   b. label all HFNO devices with the location of a compatible UPS
   c. allocate responsibility for ensuring the UPS is returned, charged and prepared for next use.

In the long-term, purchase additional equipment supported by the manufacturer of the HFNO device, and redesign patient pathways, protocols and staff training to address the underlying causes.

For further information visit:
www.england.nhs.uk/publication/national-patient-safety-alert-interruption-of-high-flow-nasal-oxygen-during-transfer/

Join us to help improve patient safety

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If you would like to submit a patient safety article to *Infant*, please email lisa@infantjournal.co.uk
If you have any incidents for national learning, please contact BAPM by emailing bapm@rcpch.ac.uk