

# Rapid Response Report

NPSA/2010/RRR015

From reporting to learning

26 August 2010

## Prevention of over infusion of intravenous fluid\* and medicines in neonates

### Issue

There is a risk of the accidental over infusion of intravenous fluids and medicines to neonates associated with the setting up of specific intravenous infusions or the overriding of safety mechanisms on infusion pumps. This risk has the potential to result in death.

### Evidence of harm

The NPSA received a report of a neonatal death following an accidental intravenous dextrose overdose. A 500 ml bag of intravenous 12.5% dextrose had been used to fill a 50 ml syringe which was then administered via a syringe pump. A 3 way tap was used to connect the 500ml bag to the syringe pump and the baby. It is likely that the overdose occurred as a result of the clamp being left open from the 500 ml bag of dextrose and the 3 way tap positioned so that the patient was receiving dextrose from both the bag and the syringe. An alternative explanation is that the tap was closed to the syringe pump and the solution infused directly from the 500ml bag. Following an inquest by HM Coroner a Coroners Rule 43 report endorsed the recommendations for shared learning made by the Court by way of a Patient Safety communication to prevent similar fatalities.

The NPSA has identified one further incident in the National Reporting and Learning System (NRLS) which reported an identical intravenous infusion set up to that of the trigger incident. However, due to the positioning of the 3 way tap and the closure of the administration set clamp, over infusion did not occur. In addition to these incidents, a further five 'near miss' incidents were identified where the safety mechanisms associated with volumetric pumps had been overridden. These include instances where intravenous fluids were removed from the infusion device and remained attached to the baby with the clamps open.

**For IMMEDIATE ACTION by all NHS organisations that provide neonatal services. Deadline for ACTION COMPLETE is 28 February 2011.**

**Actions should be led by the Medical Director, Chief Pharmacist and other appropriate senior clinical staff.**

Departments providing neonatal services should:

1. Ensure that a local neonatal intravenous administration policy is available that specifies:
  - a. When using a syringe pump to administer intravenous fluids or medicines to neonates, a bag of fluid should not be left connected to the syringe.\*
  - b. All clamps on intravenous administration sets must be closed before removing the administration set from the infusion pump, or switching the pump off. This is required regardless of whether the administration set has an anti-free flow device.
  - c. The frequency and responsibility for monitoring:
    - i. the intravenous infusion device
    - ii. the infusion administration equipment
    - iii. the patient receiving intravenous infusion
2. The above points should all be included in local standards for education, training, assessment and subject to audit to ensure clinical practice is in accordance with the local policy.

\* This action does not apply to the administration of blood components to neonates. These should continue to be administered as per The British Committee for Standards in Haematology 'Guidelines on the Administration of Blood Components' (2009) [www.bcsghguidelines.org/pdf/Admin\\_blood\\_components050110.pdf](http://www.bcsghguidelines.org/pdf/Admin_blood_components050110.pdf) (Page 51)

### Further information

Additional resources including incident data and a clinical briefing document are available at [www.nrls.npsa.nhs.uk/alerts](http://www.nrls.npsa.nhs.uk/alerts). Further queries should be directed to [rrr@npsa.nhs.uk](mailto:rrr@npsa.nhs.uk); telephone 020 7927 9890.

Gateway ref: 14470