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**The impact of the National Patient Safety Agency intravenous fluid alert on iatrogenic hyponatraemia in children**

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**Aim:** To assess the impact of the National Patient Safety Agency (NPSA) alert 22 on prescription of maintenance intravenous fluid (IVF) and development of hyponatraemia in children.

**Methods:** In December 2007, in response to NPSA alert 22, a guideline for the prescription of IVF to children was introduced to the hospital paediatric wards. The authors audited practice and outcome in children receiving maintenance IVF in June 2007 (before guideline implementation) and June 2008 (after guideline implementation). The authors used a standard proforma for data collection which included age, weight, diagnosis, comorbidities, medication, details of IVF administered and the results of any serum sodium levels taken during admission. The audit was registered with the hospital's audit department.

**Results:** Prior to the implementation of the guideline, 44 (30%) children received maintenance IVF (25 males; median (range) age 6.0 (0.08–15.0) years, weight 18.0 (3.7–70.0) kg). Six children received either 0.18% saline/4% glucose (n=5) or 5% dextrose (n=1) as maintenance IVF (IVF not recommended by NPSA alert 22), and one became hyponatraemic. After the implementation of the guideline, 56 (30%) children received maintenance IVF (34 males; median (range) age 6.9 (0.001–17.1) years, weight 22.2 (3.2–65.0) kg). One child received IVF not recommended by NPSA alert 22 (5% dextrose) and also became hyponatraemic. The median change in serum sodium levels for all children who received IVF not recommended by NPSA alert 22 (–5 (0 to –15) mmol/L) was significantly greater than those children who received IVF recommended by NPSA alert 22 (–0.5 (–13 to +7) mmol/L) p=0.002). In addition, there was a significant (p=0.04) reduction in the number of children who had electrolytes checked while on IVF after implementation of the guideline.

**Conclusion:** Implementation of a new IVF guideline has been associated with less use of IVF not recommended by NPSA alert 22, resulting in less serum sodium level reduction. The only children who became hyponatraemic received IVF not recommended by NPSA alert 22. Despite

the NPSA alert and guideline implementation, less children had electrolyte levels checked while receiving IVF.