



## Nurses for Children and Young People of Aotearoa

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### **Proposal to consider reinstating glucose 4% with sodium chloride 0.18% solution ('Barts solution') on the Hospitals Medicines List (HML)**

Nurses for Children and Young People of Aotearoa (NCYPA), a professional section of the New Zealand Nurses Organisation, welcome the opportunity to comment on the above proposal. This submission is informed by feedback from members of NCYPA national section including nurses working in tertiary education, clinical nurse specialists, nurse practitioners, and clinical nurse educators and in consultation with colleagues in paediatric medicine, paediatric anaesthetics and paediatric pharmacy.

NCYPA recommends that glucose 4% with sodium chloride 0.18% solution remains delisted for the following reasons:

- Children who receive hypotonic intravenous fluids are at greater risk than adults for hyponatraemia and its associated complications which include neurological injury, seizures and even death [1-5].
- Hospitalised children in New Zealand are not always treated in paediatric specialty organisations. This means that children are sometimes treated by nurses and physicians who are not specifically prepared for the unique physiological needs of children and infants and therefore great caution must be exercised when considering fluids and medicines which may have an adverse effect on children.
- Prescribing physicians may not always be aware of the special fluid management requirements and risks for infants and children particularly when the child is being treated by an 'adult team'.
- Similarly, administering nurses may not always be aware of the risks associated with intravenous fluids and the biochemical and fluid balance monitoring that is required to detect and treat electrolyte imbalance in children and infants.
- Neurological injury and the deaths of four children in the UK caused by hospital acquired hyponatraemia prompted the NHS to recommend that glucose 4% with sodium chloride

0.18% intravenous infusions be removed from stock and general use in areas where children are treated [6].

- Where hypotonic solutions are available, there will always be a risk that children will receive inappropriate fluids.
- We can think of no clinical benefit for children in having this solution available for use
- We note that a clinical trial is currently taking place in Mexico 'Use of Isotonic Solutions Versus Hypotonic Solutions for Preventing Hospital Acquired Hyponatremia'. The age group is 3 Months to 15 Years. The results of this study are not available yet. The protocol can be viewed at: <http://clinicaltrials.gov/ct2/show/NCT01909336> . We suggest that it would be premature to re-list BARTS solution before the results of this trial are available.

In summary, because children in New Zealand are not always treated by paediatric clinicians, there is a risk that re-listing BARTS Solution could lead to an increased risk of serious harm.

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## References

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