

# HSC COMPETENCY FRAMEWORK FOR REDUCING THE RISK OF HYPONATRAEMIA WHEN ADMINISTERING INTRAVENOUS FLUIDS TO BABIES, CHILDREN & YOUNG PEOPLE

All of the resources referred to in this document can be accessed on a central repository for HSC resources relating to fluid management on the PHA website at: <http://www.publichealth.hscni.net/directorate-nursing-and-allied-health-professions/nursing/central-repository-hsc-resources-relating->

## 1 Introduction

This document provides a framework to support existing Trust processes in reducing the risk of hyponatraemia when administering IV fluids to babies, children and young people.

The framework outlines recommendations that Trusts should implement locally to support their own internal governance requirements in providing assurance that all staff, who require it, are deemed competent in the safe administration of intravenous fluids to children from birth (term) up to their 16<sup>th</sup> birthday.

## 2 Background

A series of national and regional reports, outline a significant risk of increased mortality and morbidity associated with inappropriate management of IV fluids and hyponatraemia in children and young people.

In Northern Ireland, The Regulation and Quality Improvement Authority (RQIA) reviewed the implementation of *National Patient Safety Agency (2007) Patient Safety Alert 22: Reducing the risk of hyponatraemia when administering intravenous infusions to children*<sup>1</sup>.

Recommendations were made by RQIA in 2008<sup>2</sup> and again in 2010<sup>3</sup> to improve HSC Trust arrangements to reduce risk in this area.

In reporting progress against the implementation of the recommendations of the RQIA 2010 report, a number of Trusts highlighted that a regional approach would be beneficial in the implementation of the following two recommendations:

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<sup>1</sup> National Patient Safety Agency (2007) Patient Safety Alert 22: Reducing the risk of hyponatraemia when administering intravenous infusions to children

<http://www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=59809&p=3>

<sup>2</sup> Reducing the risk of hyponatraemia when administering intravenous infusions to children, April 2008. RQIA. [Summary report following Validation Visits to Trusts and Independent Hospitals throughout Northern Ireland].

<https://www.rqia.org.uk/RQIA/files/04/043bc7ac-b299-4f57-87ef-e80cc6ec4e64.pdf>

<sup>3</sup> Reducing the risk of hyponatraemia when administering intravenous infusions to children, May 2010. RQIA [Report of actions taken by HSC Trusts and independent hospitals to implement recommendations made in the report

"Reducing the risk of hyponatraemia when administering intravenous fluids to children" (RQIA, June 2008)]

<https://www.rqia.org.uk/RQIA/files/6a/6ae95bf4-56e6-46b6-9c3b-8f5df1590cde.pdf>

- Development of a competency assessment tool on the administration of intravenous fluids; and
- Training and assessment of staff in the administration of intravenous fluids to children.

In order to harmonise practice and to ensure that training is consistent across HSC Trusts, the Chief Medical Officer asked the PHA to form a Cross Trust Task and Finish Group to address these recommendations, provide advice and share regional learning across Trusts in Northern Ireland.

A Competency Framework was developed by the group in consultation with internal and external stakeholders to ensure consistency of approach in the implementation of RQIA recommendations. The framework, which was initially circulated in 2013, has been regularly reviewed and updated.

In the interim, the National Institute for Health and Care Excellence (NICE) has also published guidance on Intravenous fluid therapy in children and young people in hospital NICE guideline [NG29] (December 2015)<sup>4</sup>. All hyponatraemia educational resources developed to reduce the risk of harm due to hyponatraemia in Northern Ireland have been adapted to take account of NG29.

### **3 Scope of the Framework**

This Framework applies to all staff working in HSC Trusts who may be involved in the prescription, administration, monitoring and review of intravenous infusions to children from birth (term) up to their 16th birthday. Staff will include registered nurses, medical practitioners, midwives, pharmacists, agency and locum staff, and operating department assistants.

This framework will be reviewed again in October 2021, or earlier in light of relevant new guidance being published in the interim.

### **4 Professional Responsibility**

All registered professional staff are required to work only within the scope of their professional practice. Individual practice should be informed and limited by the accountable practitioner's own knowledge and competence. This instruction is reflected in the regulations of individual professional bodies.

**All registered professional staff involved in the care, assessment and clinical management of children must ensure that their practice in relation to the provision of intravenous fluids meets the knowledge and competency standards set out in this document and the training requirements of their individual Trust.**

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<sup>4</sup> <https://www.nice.org.uk/guidance/ng29>

The requirements and responsibilities of individuals and Trusts are outlined in section 6.

## **5 Policy and guidance documentation in Northern Ireland to support reducing risk of harm due to hyponatraemia**

This competency framework has been developed to support Trusts in providing assurance that all relevant Trust staff are aware of their responsibilities and adhere to recommended clinical procedures in relation to the prescription, administration, monitoring and review of intravenous fluids, including hypotonic infusions.

All documents and resources within this framework are available on a Central repository for HSC resources relating to hyponatraemia at:

<http://www.publichealth.hscni.net/directorate-nursing-and-allied-health-professions/nursing/central-repository-hsc-resources-relating->

Policy and guidance in Northern Ireland to support reducing the risk of harm from hyponatraemia includes:

- 5.1 National Patient Safety Agency (2007) Patient Safety Alert 22: Reducing the risk of hyponatraemia when administering intravenous infusions to children<sup>1</sup>.

RQIA recommended specific actions for Trusts to take in response to the NPSA Patient Safety Alert 22 (table 1) and also reported on their implementation<sup>2,3</sup>.

Trusts were required to:

- Remove sodium chloride 0.18% with glucose 4% intravenous infusions from stock and general use in areas that treat babies, children and young people. Suitable alternatives must be available. Availability of these intravenous infusions should be restricted to critical care and specialist wards such as renal, liver and cardiac units;
- Produce and disseminate clinical guidelines for the fluid management of paediatric patients. These should give clear recommendations for fluid selection, and clinical and laboratory monitoring. Within Northern Ireland these clinical guidelines are specifically those issued by the Department of Health NI (Wall Charts 5.3 and 5.4);
- Provide adequate training and supervision for all staff involved in prescribing and administration of intravenous infusions for children and young people (outlined in section A and B);
- Reinforce safer practice by reviewing and improving the design of existing intravenous fluid prescriptions and fluid balance charts for children and young people (5.5);

- Promote the reporting of hospital acquired hyponatraemia incidents via local risk management reporting systems. Implement an audit programme to ensure NPSA recommendations and local procedures are being adhered to. In NI, the Paediatric Intravenous Fluid Audit Implementation Tool (PIVFAIT) has been implemented.
- 5.2 Intravenous fluid therapy in children and young people in hospital NICE guideline [NG29]<sup>5</sup> (December 2015).
  - 5.3 Parenteral Fluid Therapy for Children and Young People (Aged over 4 weeks and under 16 years). Wallchart - Updated February 2017.
  - 5.4 Parenteral Fluid Therapy for Term Neonates (Up To 4 Weeks of Age). Wallchart - February 2017.
  - 5.5 Daily Fluid Balance and Prescription Chart (Child up to 16<sup>th</sup> birthday). Updated February 2017 (includes term neonates).

Updated guidance was endorsed by the Department of Health and two letters to Trusts and relevant bodies were issued:

Circular reference:

- HSS(MD) 16/2017, issued 6 September, 2017
- HSC (SQSD) (NICE NG29) 24/17, issued 20 June 2017

A number of resources are also provided to support knowledge, training and implementation of guidance including:

- PowerPoint presentation on Paediatric Fluid Balance & Prescription Chart
- Online Assessment on Paediatric Fluid Balance & Prescription Chart
- Additional guidance on use of the Paediatric Fluid Balance & Prescription Charts
- Guidance on how to prescribe intravenous medicine infusions on a medicines kardex and/or daily fluid balance & prescription sheet
- Clinical e-learning case studies to support knowledge and understanding
- Access to the BMJ e-learning module – Reducing the risk of hyponatraemia when administering IV fluids to children
- An audit tool for Trusts to use in monitoring compliance (Paediatric intravenous Fluid Audit Implementation Tool - PIVFAIT)

**It is the responsibility of individual Trusts to ensure all Trust local policies are updated to reflect any new or updated guidance.**

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<sup>5</sup> <https://www.nice.org.uk/guidance/ng29>

## 6 Trust Competency Framework

### Introduction

Hyponatraemia is an important, avoidable cause of mortality and neurological morbidity in children.

To minimise risks associated with the administration of intravenous fluids to children, including hyponatraemia, **HSC Trusts must ensure that all staff who care for children are aware of and use best practice guidance in relation to the provision of intravenous fluids for children and can demonstrate competence against the requisite knowledge and skills.**

The framework outlines actions for individuals and organisations to ensure that all staff caring for children have the right knowledge and skills to reduce the risk of harm due to hyponatraemia in clinical settings.

The practical administration of intravenous fluids is not covered in this document as Trusts have well established standard operating procedures<sup>6</sup> in place to support this aspect of IV fluid administration.

### Exemptions:

This framework may not be applicable in a small number of settings – for example care of the elderly wards. Decisions to exempt staff from training associated with reducing the risk of hyponatraemia should be made on a case by case basis by clinical service leads.

Where individual staff members do not need to undertake training or feel that it is not required, the following declaration may be used for appraisal and governance processes.

*I confirm that I am not required in the course of my practice to administer intravenous fluids to children aged from Birth (term) until the 16<sup>th</sup> Birthday or to supervise the administration of such fluids, and that where such circumstance exceptionally arises, that I will ensure I obtain advice from colleagues with appropriate expertise.*

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<sup>6</sup> Royal Marsden Manual of Clinical Nursing Procedures, ninth edition, available at: <https://www.rmmonline.co.uk/>

<b>Knowledge and competency framework to reduce the risk of harm associated with hyponatraemia when administering intravenous infusions to babies, children and young people.</b>	
Rationale	<p>To reduce risk of harm due to hyponatraemia by ensuring that all relevant registered health care staff have the appropriate knowledge and competencies required to safely care for babies, children and young people who need intravenous infusions.</p> <p>All staff involved in the prescribing, administering and monitoring of IV fluids for children need to be both knowledgeable and competent in prescribing IV fluids appropriately and safely.</p> <p>All registered health care professionals involved in caring for children must be able to identify and take appropriate action in instances of inappropriate prescribing.</p>
Scope	<p>For all staff who may be required to care for children, from birth (term) up to 16th birthday:</p> <ul style="list-style-type: none"> <li>❖ Medical staff – including foundation, core and specialist trainee staff, consultant and career grade staff, locum and agency staff</li> <li>❖ Registered Nurses and Midwives – including agency staff and those working in relevant psychiatric wards, paediatric nurses and midwives with the exception of care of the elderly</li> <li>❖ Registered Pharmacy Staff (except Victoria Pharmaceuticals)</li> <li>❖ Operating department assistants</li> </ul>
Resources	<p>The resources listed in this framework support both the provision of knowledge and tools to support assessment of competence in prescribing to reduce risk of harm due to hyponatraemia.</p> <p>All resources can be accessed at :</p> <p><a href="http://www.publichealth.hscni.net/directorate-nursing-and-allied-health-professions/nursing/central-repository-hsc-resources-relating-">http://www.publichealth.hscni.net/directorate-nursing-and-allied-health-professions/nursing/central-repository-hsc-resources-relating-</a></p> <ul style="list-style-type: none"> <li>• BMJ e-learning module – Reducing the risk of hyponatraemia when administering IV fluids to children.</li> <li>• The Clinical Education Centre (CEC) which provides in-service education to Nurses and AHPs employed in the five Health &amp; Social Care Trusts also runs the following course for nurses: <i>Fluid Management in Children and Young People from birth (term) up to 16th Birthday</i>. CEC email: <a href="mailto:enquiries@cec.hscni.net">enquiries@cec.hscni.net</a></li> <li>• PowerPoint presentation on Paediatric Fluid Balance &amp; Prescription Charts.</li> <li>• Online Assessment on Paediatric Fluid Balance &amp; Prescription Charts.</li> <li>• Additional guidance on use of the Paediatric Fluid Balance &amp; Prescription Charts.</li> <li>• Guidance on how to prescribe intravenous medicine infusions on a medicines kardex and/or daily fluid balance &amp; prescription sheet.</li> <li>• Case studies (2 medical, 2 surgical and 1 neonatal). Case studies have been developed by clinical staff in Northern Ireland to enhance individual assessment of knowledge and understanding of the concepts covered within the BMJ e-learning module and Daily Fluid Balance and Prescription Chart (Child up to 16<sup>th</sup> birthday – includes term neonates).</li> </ul>

	<ul style="list-style-type: none"> <li>• DoH Wall Chart – Updated February 2017 – PARENTERAL FLUID THERAPY FOR TERM NEONATES (UP TO 4 WEEKS OF AGE) BEING NURSED IN AN ACUTE SETTING.</li> <li>• DoH Wall Chart – Updated February 2017 – PARENTERAL FLUID THERAPY FOR CHILDREN AND YOUNG PEOPLE (AGED OVER 4 WEEKS AND UNDER 16 YEARS).</li> <li>• Daily Fluid Balance and Prescription Chart (Child up to 16th birthday). Updated February 2017 (includes term neonates).</li> <li>• Regional Policy for the administration of intravenous fluids to children aged from birth (term) until their 16<sup>th</sup> birthday: Reducing the risk of harm due to hyponatraemia, HSC Guidance, October 2019.</li> </ul>
<p>Actions for individuals:</p>	<p><b>What training? Who needs to do it? When does it need to be done &amp; Documented?</b></p> <p><b>What:</b></p> <p>A. <u>Review Power Point presentation on Paediatric Fluid Balance &amp; Prescription Charts and complete online assessment.</u> Staff should also participate in any local Trust training associated with the use of Daily Fluid Balance and Prescription Charts (Child from birth (term) up to 16th birthday).</p> <p>B. <u>Complete online BMJ e-learning module.</u></p> <p>C. <u>Provide evidence of completion of at least 2 prescribing case studies</u> pertinent to their field of practice using the Daily Fluid Balance and Prescription Chart (Child from birth (term) up to 16th birthday). Ideally the completion of these case studies should take place close to completion of BMJ module to enhance learning and assess understanding.</p> <p>Staff must ensure that their prescribing practice is in line with DoH Guideline (Wall Charts). Relevant staff must be supervised in the management of intravenous infusions in children and young people until their training and induction is complete and competence demonstrated.</p> <p><b>Who: (training required as above)</b></p> <ul style="list-style-type: none"> <li>• Medical – consultant and career grade staff (complete A, B and C)</li> <li>• Medical – Trainees             <ul style="list-style-type: none"> <li>○ Foundation years 1 and 2 (complete A, B and C).</li> <li>○ Core and specialist trainees (complete A, B and C)</li> </ul> </li> <li>• Medical – Locum and Agency staff             <ul style="list-style-type: none"> <li>○ Contracted and non-contracted agency workers are required as a minimum to have successfully completed the e-BMJ module (part B) within the past 3 years.</li> <li>○ Agency or locum staff working within HSC Trusts for more than one month should complete all aspects of training (A, B and C) in line with requirements with other medical staff.</li> </ul> </li> <li>• Registered Nurses and Midwives – including those working in relevant psychiatric wards, paediatric nurses and midwives with the exception of care of the elderly (complete A, B and C).</li> </ul>

	<ul style="list-style-type: none"> <li>• Nursing – Agency. The same principles apply to nurses from agency organisations as to locum and agency medical staff.</li> <li>• Registered Pharmacy Staff (except Victoria Pharmaceuticals) (complete A, B and C).  All pharmacy staff should also be aware of their own Trust pharmacy department's policy or Standard Operating procedure (SOP) for the supply of fluids containing sodium chloride 0.18%</li> <li>• Operating department assistants (complete A, B and C).</li> </ul> <p><b>When:</b></p> <p><u>At Induction</u></p> <p>All new staff should complete all three components of training (A, B and C) during their induction period. Existing staff who have not yet completed all components should do so as early as possible and submit evidence of such to their line manager.</p> <p><u>Ongoing</u></p> <p>Thereafter all staff (as outlined above) should revisit the training (A, B and C) once every three years as a minimum. Evidence of completion should be submitted to the appropriate line manager, e.g. during annual appraisal.</p> <p><b>Documentation:</b></p> <ul style="list-style-type: none"> <li>• Evidence of completion of required training should be submitted to the appropriate line manager e.g. during annual appraisal.</li> <li>• Medical trainees should provide evidence of completion of A, B and C to their employing organisation as required.</li> </ul>
<p>Actions for Trusts</p>	<p><b>Supporting training</b></p> <ul style="list-style-type: none"> <li>• All staff noted above should have access to BMJ e-learning module and resources as listed in this and be facilitated to participate in training associated with the use of Daily Fluid Balance and Prescription Charts (Child from birth (term) up to 16th birthday).</li> <li>• Trust education departments should ensure that trainees and new staff are signposted to education resources on hyponatraemia at Trust, local and specialty induction.</li> <li>• All staff who need to, should be advised on the timeframe for completion of training as outlined above and timeframe to refresh skills and knowledge (Trusts may wish to increase the frequency of refresher training for some cohorts of staff).</li> <li>• Clear instructions should be provided for staff who have difficulty in completing module/case studies, on how to access further educational support and input locally.</li> <li>• Relevant staff should have access to relevant courses provided by the Clinical Education Centre (CEC).</li> </ul> <p><b>Clinical practice</b></p> <ul style="list-style-type: none"> <li>• Relevant staff must be supervised in the management of intravenous infusions in children and young people until their training and induction is complete and competence demonstrated.</li> <li>• Trusts should ensure that locum Doctors who have not completed the e-BMJ module</li> </ul>



	<p>are not placed unless:</p> <ul style="list-style-type: none"> <li>○ Prospective approval of the Service Manager and Clinical Director is obtained prior to the placement commencing.</li> <li>○ Structures should be in place to ensure that all locum staff are aware of how to access advice on the prescribing and administration of IV fluids to babies, children and young people if required.</li> </ul> <ul style="list-style-type: none"> <li>● Structures should be in place to ensure that all agency nursing staff have the necessary skills and competence to care for children who may be receiving IV fluids and how to access advice as required.</li> <li>● The DoH Guideline (Wall Charts) should be clearly displayed in all appropriate clinical areas.</li> <li>● Ensure all trust local policies are updated to reflect any new/updated guidance.</li> </ul> <p><b>Monitoring</b></p> <ul style="list-style-type: none"> <li>● Trusts should establish robust internal processes to evidence compliance with training for all relevant staff.</li> <li>● Trusts should assess compliance in the use of the Daily Fluid Balance and Prescription Charts using the PIVFAIT audit tool available on the HSC central repository.</li> </ul>
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