

## **COMPETENCY FRAMEWORK FOR REDUCING THE RISK OF HYPONATRAEMIA WHEN ADMINISTERING INTRAVENOUS INFUSIONS TO CHILDREN & YOUNG PEOPLE.**

### **1 Introduction**

This document aims to provide a framework to support existing Trust processes in reducing the risk of hyponatraemia when administering IV fluids to children.

The framework provides 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 aged over 4 weeks and up to 16<sup>th</sup> birthday.

It should be noted that there may be some exceptions to the framework, for example preterm infants whose chronological age is greater than 4 weeks but corrected gestational age is less than 28 days, young women under the age of 16 years in labour or children under the age of 16 admitted in Diabetic Ketoacidosis (DKA).

### **2 Background**

This document has been jointly developed by HSC Trusts and the PHA, in consultation with internal and external stakeholders, to ensure consistency of approach in the implementation of RQIA recommendations.

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

Locally in Northern Ireland, in a follow up review into the application of *National Patient Safety Agency (2007) Patient Safety Alert 22: Reducing the risk of hyponatraemia when administering intravenous infusions to children*, recommendations were made by RQIA in 2008<sup>1</sup> and again in 2010<sup>2</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:

- 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

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<sup>1</sup> Reducing the risk of hyponatraemia when administering intravenous infusions to children, April 2008 [Summary report following Validation Visits to Trusts and Independent Hospitals throughout Northern Ireland] [http://www.rqia.org.uk/cms\\_resources/NI%20%20report%20Hyponatraemia%20FINAL%20v%203%200.pdf](http://www.rqia.org.uk/cms_resources/NI%20%20report%20Hyponatraemia%20FINAL%20v%203%200.pdf)

<sup>2</sup> Reducing the risk of hyponatraemia when administering intravenous infusions to children, May 2010 [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)] [http://www.rqia.org.uk/cms\\_resources/Hyponatraemia%20Report%207%20Jul%2010.pdf](http://www.rqia.org.uk/cms_resources/Hyponatraemia%20Report%207%20Jul%2010.pdf)

In order to harmonise practice and to ensure training is consistent across HSC Trusts, the Chief Medical Officer asked the PHA to form a task and finish group to provide advice, support and share regional learning across Trusts in Northern Ireland. This group had representation from the PHA and a number of nominated representatives from the five of the six Northern Ireland HSC Trusts.

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

This Framework applies to all HSC Trust registered nurses (including advanced nurse practitioners, agency/locum staff), midwives, dentists, operating department assistants, medical practitioners and pharmacists, who may be involved in the prescription, administration, monitoring and review of intravenous infusions to children aged over 4 weeks and up to 16<sup>th</sup> birthday.

This framework will be formally reviewed by the PHA in January 2016.

### **4 Professional Responsibility**

As outlined by individual professional bodies, registered professional staff are required to work only within the scope of their professional practice.

Practice should be limited by the individual accountable practitioner's own knowledge and competence.

**All professionals involved in treating children must ensure that their practice meets the knowledge and competency framework set out regionally and meets the training requirements of their individual Trust.**

The minimum responsibilities that professionals should be required to adhere to are as follows:

- Awareness of local Trust policies relating to minimising the risk of harm due to hyponatraemia. New staff should be required to complete induction as appropriate within a locally agreed timeframe. Doctors on rotations of less than a year should provide evidence of previous induction on taking up post, to determine if further update is required;
- All relevant staff should undertake training (or refresher training as required) related to minimising risk of harm due to hyponatraemia as per local Trust policy;
- Relevant professionals must be supervised in the management of intravenous infusions in children and young people until the training is complete and competence demonstrated;
- A record of all staff required to maintain competence in this area should be held and updated locally to reflect completed training and updates.

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

This framework document has been developed to support Trusts in providing assurance that all appropriate Trust staff are aware of their responsibilities and apply the recommended clinical procedures in relation to the prescription, administration, monitoring and review of intravenous fluids, including hypotonic infusions, as set out in:

- 5.1 National Patient Safety Agency (2007) Patient Safety Alert 22: Reducing the risk of hyponatraemia when administering intravenous infusions to children. Available at: <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59809>
- 5.2 DHSSPS Parenteral Fluid Therapy for Children and Young Persons (Aged over 4 weeks and under 16 years) Initial Management Guideline (Wall Chart) issued by DHSSPS in May 2014. Available at: <http://www.dhsspsni.gov.uk/hss-md-30-2013-attachment-5.pdf>
- 5.3 Daily Fluid Balance and Prescription Chart (Child up to 16<sup>th</sup> birthday) and training package issued by DHSSPS in 29 September 2014 [HSS(MD) 31/2014]. Available at:

### **Child Chart**

<http://www.dhsspsni.gov.uk/hss-md-30-2013-attachment-2.pdf>

### **Child – How to complete**

<http://www.dhsspsni.gov.uk/hss-md-30-2013-attachment-4.pdf>

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

The following RQIA Recommendations Outlined Actions for Trusts to take in Response to the NPSA Patient Safety Alert 22.

<b>Each Trust has a responsibility to</b>
<ul style="list-style-type: none"> <li>Remove sodium chloride 0.18% with glucose 4% intravenous infusions from stock and general use in areas that treat children and young people. Suitable alternatives must be available. Restrict availability of these intravenous infusions to critical care and specialist wards such as renal, liver and cardiac units;</li> </ul>
<ul style="list-style-type: none"> <li>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 DHSSPS, entitled Parenteral Fluid Therapy for Children and Young Persons (Aged over 4</li> </ul>

weeks and under 16 years) Initial Management Guideline (Wall Chart);
<ul style="list-style-type: none"> <li>• Provide adequate training and supervision for all staff involved in prescribing and administration of intravenous infusions for children and young people;</li> </ul>
<ul style="list-style-type: none"> <li>• Reinforce safer practice by reviewing and improving the design of existing intravenous fluid prescriptions and fluid balance charts for children and young people;</li> </ul>
<ul style="list-style-type: none"> <li>• 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.</li> </ul>

## 6 Trust competency framework

### Introduction

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

In order for organisations 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 specific guidelines in relation to prescribing intravenous fluids for children and can demonstrate competence against the requisite knowledge and skills.**

Importantly, individuals and health care organisations need to be assured that the knowledge can be applied appropriately in clinical practice.

The following framework outlines actions to support the provision and assessment of the knowledge required to reduce the risk of harm due to hyponatraemia in clinical settings.

The use of e-learning approaches allows both individuals and Trusts a more flexible and sustainable approach to learning in this important area.

<b>Section A - Provision and assessment of knowledge of Hyponatraemia</b>	
<b>Rationale</b>	<p>Awareness and understanding of how to reduce risk of harm due to hyponatraemia.</p> <p>Completion of the e-learning resources as recommended should provide and assesses knowledge required.</p>
<b>Scope</b>	<p>For all registered nurses (including advanced nurse practitioners), midwives, dentists, operating department assistants, medical practitioners and pharmacists who may be required to care for children, aged over 4 weeks and up to 16<sup>th</sup> Birthday.</p>
<b>Resources</b>	<ul style="list-style-type: none"> <li>BMJ e-learning module – Reducing the risk of hyponatraemia when administering IV fluids to children  <a href="http://learning.bmj.com/learning/home.html">http://learning.bmj.com/learning/home.html</a>  <a href="http://learning.bmj.com/learning/search-result.html?moduleId=5003358">http://learning.bmj.com/learning/search-result.html?moduleId=5003358</a> </li> </ul> <p>The Clinical Education Centre (CEC) provides In-Service Education to Nurses, Midwives and AHPs employed in the five Health &amp; Social Care Trusts. it runs the following course for nurses:  ‘Fluid Management in Children and Young People (from 1 month of age up to 16 years only)’  The contact details and telephone number of the CEC is as follows:  <a href="mailto:margo.duffy@cec.hscni.net">margo.duffy@cec.hscni.net</a>  <a href="mailto:denise.arnottrooney@cec.hscni.net">denise.arnottrooney@cec.hscni.net</a>    Tel: 028 9056 1353</p>
<b>Actions</b>	<p><b>Individuals</b></p> <ul style="list-style-type: none"> <li>All new staff should complete this e-learning module during their induction period. Existing staff who have not yet completed the module should do so as early as possible and submit evidence of such to their line manager.</li> <li>Thereafter all staff (as outlined in the scope above) should revisit the module, once every three years as a minimum. Evidence of completion should be submitted to the appropriate line manager, e.g. during annual appraisal.</li> </ul> <p><b>Trusts</b></p> <ul style="list-style-type: none"> <li>All staff should have access to BMJ e-learning module.</li> <li>All staff who need to, should be advised on the timeframe for completion of the module (Trusts may wish to increase the frequency of refresher training for some cohorts of staff).</li> <li>Provide clear instructions for staff who have difficulty in completing</li> </ul>

	<p>module/case studies, on how to access further educational support and input locally.</p> <ul style="list-style-type: none"> <li>Establish robust internal processes to evidence compliance with uptake for all relevant staff.</li> </ul>
<b>Section B - Assessing competence in prescribing intravenous fluids</b>	
<b>Rationale</b>	<p>Awareness of specific requirements and hazards related to prescribing of IV fluids in children aged over 4 weeks and up to 16<sup>th</sup> birthday.</p> <ul style="list-style-type: none"> <li>All prescribers caring for children are required to be competent in prescribing IV fluids appropriately and safely.</li> <li>All registered medical, and nursing staff (and others where appropriate) must be able to identify and take appropriate action in instances of inappropriate prescribing.</li> </ul> <p>The resources listed in this section support both the provision of knowledge and assessment of competence in prescribing to reduce risk of harm due to hyponatraemia.</p>
<b>Scope</b>	<p>For all registered nurses (including advanced nurse practitioners), midwives, dentists, operating department assistants, medical practitioners and pharmacists who may be required to care for children aged over 4 weeks and up to 16<sup>th</sup> birthday.</p>
<b>Resources</b>	<ul style="list-style-type: none"> <li>BMJ e-learning module – Reducing the risk of hyponatraemia when administering IV fluids to children  <a href="http://learning.bmj.com/learning/home.html">http://learning.bmj.com/learning/home.html</a>  <a href="http://learning.bmj.com/learning/search-result.html?moduleId=5003358">http://learning.bmj.com/learning/search-result.html?moduleId=5003358</a> </li> <li>DHSSPS Parenteral Fluid Therapy for Children and Young Persons (Aged over 4 weeks and under 16 years) Initial Management Guideline (Wall Chart) issued by DHSSPS in May 2014. <a href="http://www.dhsspsni.gov.uk/hss-md-30-2013-attachment-5.pdf">http://www.dhsspsni.gov.uk/hss-md-30-2013-attachment-5.pdf</a></li> <li>Daily Fluid Balance and Prescription Chart (Child up to 16<sup>th</sup> birthday) and training package issued by DHSSPS in 29 September 2014.</li> </ul> <p><b>Child Chart</b>  <a href="http://www.dhsspsni.gov.uk/hss-md-30-2013-attachment-2.pdf">http://www.dhsspsni.gov.uk/hss-md-30-2013-attachment-2.pdf</a>  <b>Child – How to complete</b>  <a href="http://www.dhsspsni.gov.uk/hss-md-30-2013-attachment-4.pdf">http://www.dhsspsni.gov.uk/hss-md-30-2013-attachment-4.pdf</a></p>

	<ul style="list-style-type: none"> <li>Additional case studies. Additional case studies are being developed 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). The additional case studies will be available by April 2015.</li> </ul>
<b>Actions</b>	<p><b>Individuals</b></p> <ul style="list-style-type: none"> <li>Complete online module as per section A.</li> <li>Ensure prescribing practice is in line with DHSSPS Guideline (Wall Chart). Relevant professionals 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>Participate in training associated with roll out of the Daily Fluid Balance and Prescription Chart (Child from 4 weeks up to 16<sup>th</sup> birthday), and provide evidence of participation.</li> <li>Provide evidence of completion of at least 2 prescribing case studies pertinent to their field of practice using the Daily Fluid Balance and Prescription Chart (Child from 4 weeks up to 16<sup>th</sup> birthday). Ideally the completion of these case studies should take place close to completion of BMJ module to enhance learning and assess understanding.</li> <li>Thereafter, as with completion of the BMJ e-learning module (section A), all staff who require it, should also complete a further two case studies once every three years as a minimum. Evidence of completion should be submitted to the appropriate line manager e.g. during annual appraisal.</li> </ul> <p><b>Trusts</b></p> <ul style="list-style-type: none"> <li>The DHSSPS Guideline (Wall Chart) should be clearly displayed in all appropriate clinical areas.</li> <li>All staff should have access to the BMJ e-learning module and be facilitated to participate in training associated with roll out of the Daily Fluid Balance and Prescription Chart (Child from 4 weeks up to 16<sup>th</sup> birthday).</li> <li>All staff who need to, should be advised on the requirement to undertake training on use of the Daily Fluid Balance and Prescription Chart (Child from 4 weeks up to 16<sup>th</sup> birthday) and timeframe for ongoing completion of associated case studies to refresh skills and knowledge. (Trusts may wish to increase the frequency of refresher training for some cohorts of staff).</li> <li>Provide clear instructions for staff who have difficulty in completing module/case studies, on how to access further educational support and input locally.</li> <li>Establish robust internal processes to evidence compliance with uptake</li> </ul>



	<p>for all relevant staff.</p> <ul style="list-style-type: none"> <li>• Ensure all trust local policies are updated to reflect any new/updated guidance</li> </ul>
<b>Section C - Practical administration of IV fluids</b>	
<b>Rationale</b>	To ensure that all staff who routinely administer IV fluids are competent in relevant practical skills.
<b>Scope</b>	Nursing and midwifery staff (may also apply to a small number of other professional staff in areas such as theatres etc.)
<b>Resources</b>	Trusts have well established policies and procedures in place to support the practical and safe administration of IV fluids.
<b>Actions</b>	No further actions required.