

From the Chief Medical Officer
Dr Michael McBride



Department of
**Health, Social Services
and Public Safety**
www.dhsspsni.gov.uk

Circular HSC (SQSD) (NICE CG174) 17/14

**Subject: NICE Clinical Guideline CG174 –
Intravenous fluid therapy in adults in hospital**

For action by:

Chief Executive of HSC Board – **for distribution to:**

All HSC Board Directors – for cascade to relevant staff
Director of Integrated Care to also cascade to:
Head of Pharmacy and Medicines Management
Family Practitioner Services Leads – for cascade to relevant
Family Practitioner groups

Chief Executive of Public Health Agency – **for distribution to:**

Director of Public Health and Medical Director – for cascade
to relevant staff
Director of Nursing and AHPs – for cascade to relevant staff

Chief Executives of HSC Trusts – **for distribution to:**

Medical Directors – for cascade to relevant staff
Directors of Nursing – for cascade to relevant staff
Heads of Pharmaceutical Services – for cascade to relevant
staff
Directors of Acute Services – for cascade to relevant staff
HSC Clinical and Social Governance Leads
Directors of Social Services – for cascade to relevant staff
Directors of Finance – for cascade to relevant staff

Chief Executive, Regulation & Quality Improvement Authority – **for
cascade to:** relevant independent healthcare establishments

Chief Executives of HSC Special Agencies and NDPBs

For Information to:

Chair of HSC Board
Chair of Public Health Agency
Chairs of HSC Trusts
Chair of RQIA
NICE Implementation Facilitator NI
Members of NI NICE Managers' Forum

Summary of Contents: This guidance offers evidence-based advice
on intravenous (IV) fluid therapy for adults in hospital.

Enquiries:

Any enquiries about the content of this Circular should be addressed
to:

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Circular Reference: HSC (SQSD) (NICE CG174) 17/14

Date of Issue: 22 July 2014

Related documents:

HSC (SQSD) 3/13

Superseded documents

Status of Contents:

Action

Implementation:

As per circular. Generally, Clinical Guidelines should be
implemented within 12 months of endorsement.

Additional copies:

Available to download from

<http://www.dhsspsni.gov.uk/index/phealth/sqs/sqsd-guidance.htm>

Dear Colleagues

NICE Clinical Guideline CG174 - Intravenous fluid therapy in adults in hospital
(<http://www.nice.org.uk/guidance/CG174>)

The Department has recently reviewed the above NICE guidance and has formally endorsed it as applicable in Northern Ireland.

Professor Ian Young was asked to form a group of local experts to consider the local implications of the guidance. This has resulted in a number of caveats being developed which can be found in Appendix 1. To facilitate implementation of NICE CG174, the group has also developed a tool which clinicians may find helpful where treatment using fluid containing Sodium Chloride is required. This is locally developed guidance providing one option for fluid management and can be found in Appendix 2.

It should also be noted that the NICE e-learning tool is not suitable for use in Northern Ireland and must not be utilised.

The NICE guidance CG174 applies to the management of fluids in adults. When prescribing fluids in children on adult wards the guidance in the wall chart PARENTERAL FLUID THERAPY for CHILDREN & YOUNG PERSONS (AGED OVER 4 WEEKS & UNDER 16 YEARS) should be followed.

In accordance with the process outlined in circular HSC (SQSD) 3/13 (http://www.dhsspsni.gov.uk/hsc_sqsd_3_13.pdf), the following actions should be taken

1. HSC Board / PHA
 - a. Identify a Professional Lead who will consider the commissioning implications of the Clinical Guideline and co-ordinate with any other relevant commissioning teams. This Lead will identify any areas where regional planning / investment / commissioning are required, or where there is material risk to safety or quality. These will then be actioned immediately through normal commissioning arrangements or through bespoke arrangements reflecting the nature of the issue / risk.
 - b. Ensure that relevant guidance is sent to the appropriate Family Practitioners.
 - c. Seek positive assurance from the HSC Trusts that the required initial actions have been undertaken within a 3 month period, and that the Guideline has been implemented within a further 9 months (unless otherwise notified by the HSC Trusts).
 - d. Where significant investment/ commissioning needs cannot be met within the usual timeframe, agree appropriate arrangements with HSC Trusts. Report to DHSSPS as required at 6 monthly accountability meetings.

2. HSC Trusts
 - a. Proceed with targeted dissemination, agree a clinical/management lead to coordinate implementation and consider what has to be done to achieve implementation using a risk based assessment and baseline review as appropriate to support planning. These initial actions should be undertaken within a three month period.
 - b. Implement the Guideline within a further 9 months (apart from any elements where significant issues have been raised with the HSC Board/PHA).

- c. Provide positive assurances to the HSC Board that required initial actions have been taken within the 3 month planning period and that the Guideline has been implemented within a further 9 months, where appropriate.
 - d. Where significant investment/ commissioning needs cannot be met within the usual timeframe, notify the HSC Board/PHA at the earliest opportunity through the bi-monthly director level meetings and agree appropriate arrangements with them to achieve implementation.
3. RQIA
 - a. Disseminate the Guideline to the independent sector as appropriate
 4. HSC Special Agencies and NDPBs
 - a. Take account of this Guideline in training and other developments as appropriate.

To inform the planning process, please find attached details from the Departmental review including estimates of costs / savings based on the NICE costing template, where this is applicable. You should also consider and take account of other relevant Departmental policies and strategies in your planning, as well as any legislative / policy caveats identified in the course of the Departmental review.

A full current list of NICE guidance endorsed for application in Northern Ireland can be found on the [Department's website](#).



Dr Michael McBride
Chief Medical Officer



Charlotte McArdle
Chief Nursing Officer



Dr Mark Timoney
Chief Pharmaceutical
Officer

Endorsed NICE guidance - Details from Departmental review

Reference Number	NICE Clinical Guideline - CG174
Title	Intravenous fluid therapy in adults in hospital
Summary of guidance	<p>This clinical guideline offers evidence-based advice on intravenous (IV) fluid therapy for adults in hospital.</p> <p>It contains recommendations about general principles for managing IV fluids, and applies to a range of conditions and different settings. It does not include recommendations relating to specific conditions.</p>
Number of people expected to take up or benefit from the service / therapy	Unable to calculate for NI.
Costs / savings associated with implementation	<p>Due to lack of local data we are unable to calculate the cost of implementing this guidance in NI. Potential areas for additional costs include the possible need for additional specialist hours. In addition, hospitals will need to review their local training systems however; it is thought any increase in training costs is not likely to be significant. As a result of implementing this guidance in England, it is expected that the number of prescribing errors will be reduced, as well as the subsequent adverse effects on morbidity and mortality which will generate savings locally.</p>
Related strategically relevant DHSSPS policies	None
Inter-Departmental interest	None

Legislative / policy caveats	<p>This advice does not override or replace the individual responsibility of health professionals to make appropriate decisions in the circumstances of their individual patients, in consultation with the patient and/or guardian or carer. This would, for example, include situations where individual patients have other conditions or complications that need to be taken into account in determining whether the NICE guidance is fully appropriate in their case.</p> <p>The Mental Capacity Act 2005 and the Department of Health document 'Reference Guide to Consent for Treatment or Examination' do not apply in NI, but work is under way to bring forward similar legislation for NI, incorporating mental capacity and mental health provisions. The DHSSPS guidance 'Reference Guide to Consent for Examination, Treatment or Care (2003)', which is available on the DHSSPS website, gives advice on determining whether a person has capacity and on what action may be taken where the person lacks capacity. Available from: http://www.dhsspsni.gov.uk/consent-referenceguide.pdf</p>
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Fluid Management
– specific Caveats

Recommendation 1.4.4 recommends that consideration be given to the use of 25–30 ml/kg/day sodium chloride 0.18% in 4% glucose with 27 mmol/l potassium for routine maintenance. **Fluids containing 0.18% sodium chloride must be removed from stock and general use in all general units in which children might be treated. Suitable alternatives must be available.**

Recommendation 1.4.5 recommends that consideration should be given to delivering intravenous fluids for routine maintenance during daytime hours. **This should be interpreted as during normal waking hours i.e. a period of not less than 16 hours.**

NICE Clinical Guideline CG174 includes a table which sets out the consequences of fluid mismanagement to be reported as critical incidents. **In Northern Ireland, these should be treated as adverse incidents and reported in line with your Trusts arrangements for reporting of adverse incidents.**

One of the key recommendations of CG174 is the use of terminology involving the "5Rs" (Resuscitation, Routine maintenance, Replacement, Redistribution and Reassessment) to underpin teaching and practice of fluid balance in adults. This terminology has not been routinely used until now in NI guidance, but is now being adopted and integrated with Northern Ireland guidance on the topic. The "5Rs" terminology is now being reflected in the regional adult and paediatric fluid balance charts. A letter is also being issued to the directors of undergraduate medical, nursing and pharmacy education to ensure that teaching practice at the respective schools is amended to ensure that the "5Rs" terminology becomes embedded in undergraduate and postgraduate programmes.

NICE have produced an online training tool to support implementation of Clinical Guideline CG174. This tool uses a number of illustrative cases which recommend the use of fluids containing 0.18% sodium chloride for routine maintenance. **Fluids containing 0.18% sodium chloride must be removed from stock and general use in all general units in which children might be treated. Suitable alternatives must be available.**

The online training tool recommends that prescribers

abbreviate e.g. 'sodium chloride 0.9%' to 'NaCl 0.9%'. **Trust Medicines Codes recommend that abbreviations are avoided.**

For the reasons outlined above the NICE online training tool is not appropriate for use in Northern Ireland and must not be utilised.

GAIN has been asked to conduct a review of its guidance on Hyponatraemia in Adults to ensure that it is consistent with NICE Clinical Guideline CG174 on Intravenous fluid therapy in adults in hospital adjusted for the above NI caveats. In the interim, the GAIN guidance should be used in conjunction with NICE CG174 and above NI caveats.

Appendix 2

Suggested IV fluid prescription (by body weight) for routine maintenance **over a 24-hour period**, to deliver 25 ml/kg/day, 1 mmol/kg of Na, K and Cl. Maximum routine maintenance volume 2500 mls/day for individuals over 100kg. Consider seeking expert advice in the case of very obese patients.

Body Weight (Kg)	Total IV fluid volume (mls) and rate (mls/hr) (based on 25 ml/kg/day)	0.9% sodium chloride with 20 mmols potassium (500 ml bag) (mls)		5% glucose with 20 mmols potassium (500 ml bag) (mls)	
		Volume	Duration	Volume	Duration
40	1000 = 42 mls/hr	250	6 hours	750	18 hours
50	1250 = 52 mls/hr	315	6 hours	935	18 hours
60	1500 = 62 mls/hr	375	6 hours	1125	18 hours
70	1750 = 73 mls/hr	440	6 hours	1310	18 hours
80	2000 = 83 mls/hr	500	6 hours	1500	18 hours
90	2250 = 94 mls/hr	565	6 hours	1685	18 hours
100	2500 = 104 mls/hr	630	6 hours	1870	18 hours
>100	2500 = 104 mls/hr	630	6 hours	1870	18 hours

Routine maintenance provision should nearly always be a short term measure.

These are initial prescriptions and further prescriptions should be guided by appropriate assessment and monitoring.

Suggested IV fluid prescription (by body weight) for routine maintenance **over a 16-hour period**, to deliver 25 ml/kg/day, 1 mmol/kg of Na, K and Cl. Maximum routine maintenance volume 2500 mls/day for individuals over 100kg. Consider seeking expert advice in the case of very obese patients.

Body Weight (Kg)	Total IV fluid volume (mls) and rate (mls/hr) (based on 25 ml/kg/day)	0.9% sodium chloride with 20 mmols potassium (500 ml bag) (mls)		5% glucose with 20 mmols potassium (500 ml bag) (mls)	
		Volume	Duration	Volume	Duration
40	1000 = 62 mls/hr	250	4 hours	750	12 hours
50	1250 = 79 mls/hr	315	4 hours	935	12 hours
60	1500 = 94 mls/hr	375	4 hours	1125	12 hours
70	1750 = 109 mls/hr	440	4 hours	1310	12 hours
80	2000 = 125 mls/hr	500	4 hours	1500	12 hours
90	2250 = 140 mls/hr	565	4 hours	1685	12 hours
100	2500 = 156 mls/hr	630	4 hours	1870	12 hours
>100	2500 = 156 mls/hr	630	4 hours	1870	12 hours

Routine maintenance provision should nearly always be a short term measure.

These are initial prescriptions and further prescriptions should be guided by appropriate assessment and monitoring.