Diarrhoea in Children;

Nursing management of acute diarrhoea < 7days

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Ratified By:	Clinical Governance Committee
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Policy Executive Owner:	Sharon Calder, Senior Sister, PACU, Dr Caroline Fertleman, Consultant Paediatrician
Designation of Author:	Consultant Paediatrician Band 7 Senior Sister
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Target Audience:	Paediatric nurses, Emergency Department Nurses
Key Words:	Gastroenteritis, dehydration, rehydration therapy

Version Control Sheet

Version	Date	Author	Status	Comment
1	May 2008	Sharon Calder	Sister PACU	Original document
2	May 2009	Sharon Calder	Sister PACU	Updated in accordance with NICE guidelines
3	March 2011	Sharon Calder	Sister PACU	Reviewed, no change
4	July 2014	Sharon Calder	Senior Sister PACU. Guideline LIVE	Updated to include: • **Box 1: Common differential diagnosis and associated features.** • Reference to Children's Assessment Unit (CAU) • Transposed into current template

➢ Criteria for use

- Nursing guideline for use by nurses in the Emergency Department (ED)/Children's Assessment Unit (CAU)/Clinic 4D/Ifor ward when managing children presenting with diarrhoea +/- vomiting < 7 days
- A flow chart is attached for ease of use in the clinical area
- This guideline is intended for use during the first 4 hours of care in conjunction with the guideline "Gastroenteritis in children under 5 years", available at: http://whittnet/document.ashx?id=1986

➢ Background/ introduction

The aim of the guideline is:

- To promote consistency of care of patients with similar clinical problems presenting in different paediatric areas
- To promote the early use of oral rehydration solution (ORS) and to reduce the length of time spent in hospital.

ORS has been shown to be the most appropriate treatment for the majority of children who present with gastroenteritis. Evidence suggests that early administration of enteral rehydration by oral or nasogastric (NG) routes is quicker in correcting dehydration and is associated with fewer hospital visits, reduced length of hospital stay and fewer major adverse events compared with treatment with intravenous (IV) rehydration. It is safer and more effective than IV therapy for all degrees of dehydration except shock.[1-3, 7]

➢ Inclusion/ exclusion criteria

Note: Not all causes of diarrhoea and vomiting are due to gastroenteritis.

A serious cause and red flag symptoms must be considered (see Box 1). These children are not suitable for an oral fluid challenge and must be referred to paediatrics accordingly

Box 1: Common differential diagnosis and associated features.

Differential diagnosis	Red flags and features that may indicate other diagnosis
• Urinary Tract Infection • Meningitis • Intussusception • Malrotation/Volvulus • Appendicitis • Haemolytic Uraemic Syndrome • Diabetic Ketoacidosis • Inborn errors of metabolism	• Temp higher 38°C <3months • Temp higher 39°C 3-6months • Shortness of breath or tachypnoea • Any reduction in Glasgow Coma Scale • Neck stiffness • Bulging fontanelle • Non blanching rash • Blood +/- mucus in stool • Bilious (green) vomiting • Severe/localised abdominal pain • Abdominal distension or rebound tenderness

➢ Assessment

Assessment, treatment and parental education should begin as soon as the child arrives in hospital.

Assess level of dehydration (see ox 2), observations to include:

- Weight, temperature, pulse, respiratory rate, capillary refill time and blood pressure.
- Consider obtaining urine for urinalysis/Microbiology, Culture & Sensitivity (MC&S) and stool specimen for MC&S and virology
- Consider applying local anaesthetic gel if child may require bloods/IV access

Capillary Refill Time (CRT)

Apply gentle pressure for 5 seconds with your thumb on the midsternum to blanch underlying skin. Measure the time taken for the colour of the underlying tissue to become pink again. Normal is <2 seconds. The presence of a normal CRT makes significant dehydration very unlikely.

Box **2 – Signs of Dehydration**[1, 3, 7]

No/mild dehydration (consistent with <3% weight loss)	**Moderate dehydration** (consistent with 3-8% weight loss)	**Severe dehydration** (consistent with 9% or more weight loss)
• No signs	• Dry mucous membranes • Decreased urine output • Sunken eyes (and minimal or no tears) • Decreased skin turgor (pinch skin of abdomen for 1-2 seconds) • Altered neurological status (drowsiness, irritability) • Tachypnoea	Increasingly marked signs from mild-moderate group, plus: • Tachycardia • Decreased peripheral perfusion (cold/mottled/pale peripheries) • CRT>2 seconds • Hypotension
Give enteral fluids 3.5mls/kg/hr	Give ORS **12mls/kg/hr** This is to correct a 5% deficit in the 4 hours	Will need IV rehydration

➢ Clinical management

The following fluid requirements have been modified from the recommended fluid calculations in the Gastroenteritis guideline for the purpose of rapid assessment and management in the ED/CAU setting (for oral/Naso Gastric tube use only **not** Intra Venous).

Mild – manage ambulatory in ED/CAU.

- Continue usual fluids at maintenance of **3.5mls/kg/hr.**
- Review at **90 minutes** to assess for worsening dehydration and refer to the Doctor's as appropriate.
- If tolerating ORS, Doctors may discharge with advice leaflet and advice when to return.

Mild-Moderate - manage ambulatory in ED/CAU.

- A "fluid challenge" should be commenced. This is rapid rehydration with ORS over 4 hours to replace existing losses. Oral fluids should be offered "little and

often", by syringe if necessary. **12mls/kg/hr** is thought to be a good guide amount. Encourage carer to offer fluids every 5 minutes and complete fluid balance chart. **Re-assess every 90 minutes** and if no improvement in clinical signs of dehydration or worsening signs, consider NG or intravenous infusion.[1, 7] Inform Doctors.
- Consider admission to CAU from ED if further observation/rehydration required after **3 hours**.

Severe – treat for shock as per Whittington "Intravenous fluid management of paediatric patients guideline".

- **Call Registrar.**
- Needs immediate IV access and **fluid bolus of 20mls/kg 0.9% saline**, to be repeated as required.
- Will require **admission** to Ifor ward or the High Dependency Unit as appropriate.

➢ Clinical management : fluid rehydration

- Ideally all children should be rehydrated orally. ORS such as dioralyte should be used as it has been formulated to have the correct ratio of sodium, water and osmolality. It should not be altered with juices or ribena unless refused. In this case, the weakest dilution of fruit juice should be used (e.g. 1:5). Give fluid little and often.[1, 3, 7]
- If oral fluids are refused consider giving ORS via a NGT. This should be attempted regardless of the child's age, even toddlers and older children can tolerate a NGT. ORS should ideally be administered by constant infusion through a NGT as this has been proven to be very effective.[1, 5, 7] Clinical trials support using NGT fluids, even for vomiting patients.[6]

➢ Management of feeding during gastroenteritis

- **Breastfeeding** should be continued at all times, even during the initial rehydration phase.[3]
- **Formula fed –** Restart at full strength after 4 hours rehydration has been completed. Diluted formula is not recommended.[1, 3]
- **Weaned children** – normal fluids and age appropriate diet after 4 hours rehydration. Avoid fatty foods or foods high in simple sugars. Many trials now suggest that rapid introduction of feeding following rehydration reduces the duration of illness and the number of loose stools, as well as improving nutrition.[1]

➢ Discharge

Give advice, contact details, referral to community services as appropriate and an information leaflet. If necessary a prescription of ORS should be given if substantial losses continue.

➢ Contacts (inside and outside the Trust including out-of-hours contacts)

Nursing Staff; CAU (08:00-20:00) Tel: 020 7288 3557

Nursing Staff, Ifor (24hrs) Tel: 020 7288 5442

Air call Paediatric Registrar, out of hours

➢ References (evidence upon which the guideline is based)

1. Armon K, Stephenson T, Werneke U, Eccleston P and MacFaul R (2001) (Paediatric Accident and Emergency Research Group). *Guideline for the management of children presenting to hospital with diarrhoea, with or without vomiting.* Archives of Disease in Childhood;85:132-142

2. Atherly-John YC, Cunningham SJ, Crain EF (2002) *A randomized trial of oral vs. intravenous rehydration in a paediatric emergency department.* Arch Paedtr Adolesc Med; 156:1240-3

3. Centres for Disease Control and Prevention (2003) *Managing acute gastroenteritis among children: oral rehydration, maintenance and nutritional therapy.* MMWR; 52, RR16, 1-13

4. Duggan C, Lasche J, McCarty M, et al (1999) *Oral rehydration solution for acute diarrhoea prevents subsequent unscheduled follow-up visits.* Paediatrics; 104:e29

5. Fonseca BK, Holdgate A and Craig JC (2004) *Enteral vs. Intravenous Rehydration Therapy for Children with Gastroenteritis. Arch Paediatr Adolesc Med; 158:483-490*

6. Nager AL, Wang VJ (2002) *Comparison of nasogastric and intravenous methods of rehydration in paediatric patients with acute dehydration.* Paediatrics; 109:566-72

7.Starship Children's Health Clinical Guideline (2006), Starship Foundation, Auckland, New Zealand

8. NICE (2007) "Diarrhoea and vomiting in children under 5 – final scope" www.nice.org.uk

To be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval

		Yes/No	Comments
1.	**Does the procedural document affect one group less or more favourably than another on the basis of:**		
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If you have identified a potential discriminatory impact of this procedural document, please refer it to the Director of Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact the Director of Human Resources.

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1.	**Title**		
	Is the title clear and unambiguous?	Yes	
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2.	**Rationale**		
	Are reasons for development of the document stated?	Yes	
3.	**Development Process**		
	Is it clear that the relevant people/groups have been involved in the development of the document?	Yes	
	Are people involved in the development?	Yes	
	Is there evidence of consultation with stakeholders and users?	Yes	
4.	**Content**		
	Is the objective of the document clear?	Yes	
	Is the target population clear and unambiguous?	Yes	
	Are the intended outcomes described?	Yes	
5.	**Evidence Base**		
	Are key references cited in full?	N/A	
	Are supporting documents referenced?	N/A	
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Tool to Develop Monitoring Arrangements for Policies and guidelines

What key element(s) need(s) monitoring as per local approved policy or guidance?	Who will lead on this aspect of monitoring? Name the lead and what is the role of the multidisciplinary team or others if any.	What tool will be used to monitor/check/observe/Asses s/inspect/ authenticate that everything is working according to this key element from the approved policy?	How often is the need to monitor each element? How often is the need complete a report ? How often is the need to share the report?	What committee will the completed report go to?
Element to be monitored	**Lead**	**Tool**	**Frequency**	**Reporting arrangements**
All aspects	**Named author**	**Audit**	**b-annual**	**Departmental/ ward meetings or by exception to PCGG if non-adherence report**