LRI Emergency Department and Children's Hospital

Acute Gastroenteritis

Staff relevant to:	Clinical and Nursing staff working within UHL Children's Emergency Department and Children's Hospital
Team approval date:	November 2022
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Reviewed by:	L Ingram & A Mistry
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1. Introduction and Who Guideline applies to

Suspect gastroenteritis if there is a sudden change in stool consistency to loose or watery stools, and/or a sudden onset of vomiting. Be aware that in children with gastroenteritis:

- Diarrhoea usually lasts for 5-7 days, and in most it stops within 2 weeks
- Vomiting usually lasts for 1-2 days, and in most it stops within 3 days

This guideline applies to medical and nursing staff caring for babies and children with suspected or confirmed gastroenteritis.

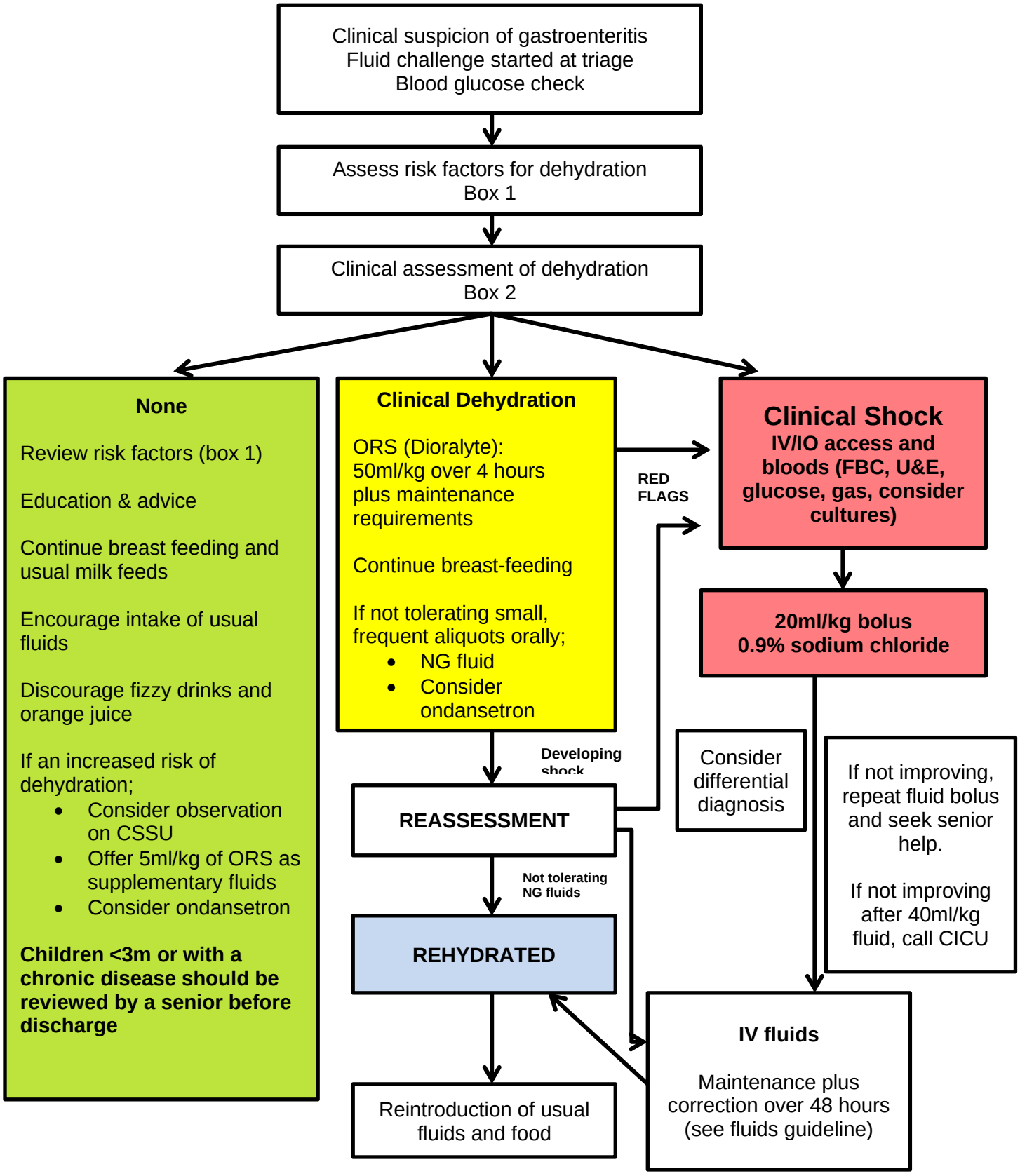
Related documents:

Fluid Electrolyte Management UHL Childrens Hospital Guideline C6/2015

Sepsis UHL Childrens Hospital Guideline D4/2022

Neonatal Sepsis UHL Children's Hospital D5/2022

2. Guideline Standards and Procedures



Title: Acute Gastroenteritis V:5 Trust Ref: C37/2006
Approved by Children's Hospital & Children's ED Clinical Practice Group on: November 2022 Next Review: November 2025
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Box 1 Children at increased risk of dehydration:
CHILDREN AGED LESS THAN 3 MONTHS OR WITH A CHRONIC MEDICAL CONDITION NEED A SENIOR REVIEW BEFORE DISCHARGE

- Infants (esp. if < 6 months, low birth weight or those who have stopped breastfeeding during illness)
- ≥ 6 stools in past 24 hours
- ≥ 3 vomits in past 24 hours
- Poor drinking before presentation
- Signs of malnutrition
- Concern about the ability of the family to manage at home.

The following features may occur in gastroenteritis but should prompt careful consideration of differential diagnosis. Discuss with senior colleague if diagnosis unclear*:*

Severe abdominal pain or rebound tenderness	Persistent diarrhoea (> 10 days)
Bilious vomit	Blood and/or mucus in stool
Vomiting without diarrhoea	Looks very unwell
Temp > 39°C (or >38°C if < 3 months	Altered conscious state
Neck stiffness	Abdominal distension
Non-blanching rash	Difficulty breathing

Differential Diagnosis

- Systemic infection (UTI, pneumonia, meningitis, sepsis).
- Appendicitis.
- Other surgical causes (intussusception, subacute bowel obstruction, Hirschsprung's colitis).
- Gastro-oesophageal reflux.
- Haemolytic uraemic syndrome.
- Intracranial pathology.
- FPIES (Food protein induced enterocolitis syndrome) - a rare and severe form of Non IgE-mediated food allergy that can present with severe vomiting +/- diarrhoea in the first year of life. It can present with shock. If concerns please discuss with allergy team.

Important Points when taking the History

- Onset, frequency and duration of symptoms.
- Number of times child has urinated in past 24 hours.

- Any other family/contacts unwell? Recent foreign travel? Consumption of possible unsafe foods (takeaway, BBQ)?
- Recent medication use (especially antibiotics).

Assessment of Dehydration

Compare today's weight with any recent measurements

Box 2: Assessment of dehydration		
No Clinically Detectable Dehydration	**Clinical Dehydration**	**Clinical Shock**
Appears well	⚑ Appears unwell or deteriorating	
Alert and responsive	⚑ Altered responsiveness (e.g. irritable, lethargic)	Decreased level of consciousness
Normal urine output	Reduced urine output	
Skin colour unchanged	Skin colour changed	Pale or mottled skin
Warm extremities	Warm extremities	Cold extremities
Eyes not sunken	⚑ Sunken eyes	
Moist mucous membranes	Dry mucous membranes (except for 'mouth breather')	
Normal HR	⚑ Tachycardia	Tachycardia
Normal RR	⚑ Tachypnoea	Tachypnoea
Normal peripheral pulses	Normal peripheral pulses	Weak peripheral pulses
Normal CRT	Normal CRT	Prolonged CRT
Normal skin turgor	⚑ Reduced skin turgor	
Normal BP	Normal BP	Hypotension

⚑ increased risk of progression to shock

More numerous and more pronounced symptoms and signs of clinical dehydration indicate greater severity. For clinical shock, one or more of the symptoms and/or signs listed would be present.

Investigations

There is no need to send a stool culture if the child presents with typical viral gastroenteritis.

Children presenting with vomiting will usually have a blood sugar check at triage.

Bloods are not routinely necessary, but if giving IV fluids then consider checking a venous gas, U&Es and blood sugar.

Fluid Management

Fluid Electrolyte Management UHL Childrens Hospital Guideline has more details

Children with clinical shock – see fluid and electrolyte management guidelines

Children with clinical dehydration
If a child refuses ORS or it is not available apple juice is a suitable alternative rehydration fluid. If pre-made ORS is not available, it can be made up using the recipe in Appendix 1.
NG fluids can be successful even when a child is vomiting small oral aliquots. Fluid can be administered via a feed pump, reducing nursing workload. The use of NG fluids removes the risks associated with cannulation and the use of IV fluids. NG tubes are well-tolerated by many children, with appropriate distraction after insertion.

Fluids & Nutrition after rehydration

- Encourage breastfeeding, other milk feeds and fluid intake.
- Give full strength milk straight away.
- Reintroduce child's usual solid food.
- Avoid fizzy drinks and fruit juices until the diarrhoea has stopped.
- Consider giving 5 ml/kg of ORS after each large watery stool if at increased risk of dehydration (see box under history).
- If dehydration recurs, start oral rehydration again.

Medications

- Ondansetron
    - Can be used orally or sublingually in the vomiting child to facilitate enteral fluid replacement
    - Consider if a child is not tolerating oral fluids, despite a robust fluid challenge given with adequate nursing support
    - See BNF for further drug information (this indication is not listed in the BNFc but dosing information has been agreed with UHL Pharmacy)

	Oral wafers/Sublingual	Oral solution
8-15kg	--	2mg
15-30kg	4mg	4mg
>30kg	8mg	8mg

IV dose; 100mcg/kg (max 4mg) as a stat dose

- Antidiarrhoeals are not recommended.
- Antibiotics are only needed in confirmed specific bacterial infections for certain at-risk groups; take microbiology advice. If a child appears to be septic, follow Sepsis UHL Childrens Hospital Guideline or Neonatal Sepsis UHL Children's Hospital guidelines.

Discharge

It is acceptable to discharge a child who is still vomiting, provided they are not dehydrated and have demonstrated the ability to drink small frequent aliquots of fluid.

Advice about the following should be given to carers at discharge (e.g. UHL parent information leaflet, NICE guidance to parents appendix 1);

- Managing vomiting at home
- Red flags/when to seek further help or advice
- Natural history of gastroenteritis, including an expectation of how long symptoms might last

Special Cases

Hypernatraemia – see Fluids and Electrolyte guideline

Haemolytic uraemic syndrome – discuss with paediatric nephrology

- Food poisoning
    - Suspect with diarrhoea, crampy abdominal pain, nausea +/- vomiting with a history of undercooked or contaminated food (e.g. BBQs, takeaways, unpasteurised cheese or milk, poorly stored or prepared meat/food). Other members of the family may also be affected.
    - There is usually no need for antibiotics and symptoms are self-limiting
    - Follow the usual supportive treatment measures as above
    - Send stool for culture with appropriate clinical details and ensure that results are chased if the child is discharged (well children with positive stool cultures usually don't require any treatment)
    - Inform PHE of any confirmed cases.
- Prolonged Diarrhoea > 14 days
    - If still unwell, seek senior opinion and investigate further.
    - If well, send stool samples for MC&S and reducing substances. Place details in the CAT chase book to follow up.

3. Education and Training

None

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Use of enteral fluids for rehydration in clinical dehydration	Audit	Consultant Paediatrician		Local departmental audit team

5. Supporting References

Diarrhoea and vomiting caused by gastroenteritis in under 5s: diagnosis and management, NICE, April 2009, reviewed October 2018
Fluid Electrolyte Management UHL Childrens Hospital Guideline
Ondansetron in Vomiting Children, LRI ED SOPs, August 2014
Shiga toxin-producing Escherichia coli: public health management, Public Health England, updated August 2021
Notifiable diseases and causative organisms: how to report, Public Health England, May 2010, updated September 2022
Effect of Dilute Apple Juice and Preferred Fluids vs Electrolyte Maintenance Solution on Treatment Failure Among Children With Mild Gastroenteritis: A Randomized Clinical Trial, Freedman SB, Willan AR, Boutis K, Schuh S. JAMA. 2016;315(18) May 2016

6. Key Words

Dehydration, Diarrhoea, Gastroenteritis, Vomiting

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.
As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

Contact and review details	
Guideline Lead (Name and Title) L Ingram – Higher Specialty Trainee A Mistry – Consultant	**Executive Lead** Chief Medical Officer
Details of Changes made during review: Added links to fluid and electrolytes and sepsis guidelines Added instruction on how to prepare ORS Updated references	

Appendix 1: How to prepare 1 litre (1000ml) of Oral Rehydration Solution (ORS)

To prepare ORTS at home using salt, sugar and water;

- Put 1 litre of cool water into a clean jug
- To the water add 6 level teaspoons of sugar (granulated or caster sugar is fine)
- Add half a level teaspoon of table salt
- Gently stir the water to dissolve the sugar and salt
- Give to the patient as directed by the nurse, doctor or pharmacist.

Label and cover the jug of ORS, keeping it in the fridge between uses. Every 24 hours the old solution should be thrown away and a new solution must be made up as directed above.
If you have any questions about this treatment please read any information sheet you have been given, look at the website www.nhs.uk or call 111 for non-emergency medical advice
Source – https://rehydrate.org/index/html