

# Paediatric Clinical Assessment Tools For Gastroenteritis



## Purpose of this Guideline

This Guideline is intended to act as a quick reference guide to some of the most common medical conditions for unscheduled healthcare attendances in children and young people (ages 0-16), which are: respiratory tract infections (croup/ bronchiolitis), asthma, fever, gastroenteritis and abdominal pain. It is aimed to assist primary care professionals when treating children and guide appropriate escalation. Parent / Carer information leaflets are included.

**Clinicians are expected to take this guideline fully into account when exercising their clinical judgement.** The guidance does not, however, override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient or carer.

When you feel a GP review in a specific time period is clinically appropriate, but falls outside of the 'in hours' GP service, please advise your patient/family to call NHS 111 (at an agreed time interval/ level of deterioration depending on your concerns) and advise that there is a 'predetermined plan to speak with an Out of Hours GP'.

Please provide your patient/family with a letter detailing your clinical findings and concerns to help the Out of Hours GP. The patient should also be given the appropriate Parent / Carer information leaflets.

The clinical assessment tools were arrived at after careful consideration of the evidence available including, but not exclusively SIGN, NICE Guidelines, Birmingham Children's Hospital guidelines, existing Birmingham Children's Hospital Information Leaflets, EBM date and NHS Evidence.

With thanks to the team at Gloucestershire CCG who produced the original Big 6 Pathways, on which this guideline is based.

# Normal Values

Normal values at different ages (APLS, Edition 5)

Age of child (years)	Under 1	1–2	2–5	5–12	Over 12
<b>Respiratory rate</b>	30–40	25–35	25–30	20–25	15–20
<b>Heart rate</b>	110–160	100–150	95–140	80–120	60–100
<b>Systolic blood pressure</b>	80–90	85–95	85–100	90–110	100–120

Calculations for commonly used emergency drugs (APLS, Edition 5)

	Formula	Maximum dose
<b>Weight (kg)</b>	<b>Child 0–12 months</b> Weight = $(0.5 \times \text{age in months}) + 4$	
	<b>Child 1–5 years</b> Weight = $(2 \times \text{age in years}) + 8$	
	<b>Child 6–12 years</b> Weight = $(3 \times \text{age in years}) + 7$	
<b>Energy (J)</b>	4 J/kg	150–200 J biphasic for first shock 150–360 J biphasic for subsequent shocks
<b>Tube size</b>	<b>Pre-term babies</b> 2.5 mm tube <b>Babies</b> usually 3 or 3.5 mm tube <b>Children &gt;1 year</b> Tube size = $(\text{age in years}/4) + 4$	
<b>Fluid Bolus (IV or IO)</b>	20 mL/kg of 0.9% saline <b>Exceptions:</b> Trauma/DKA/cardiac problems use 10 mL/kg of 0.9% saline	500 mL of 0.9% saline in trauma/ DKA/cardiac problems 1000 mL of 0.9% saline
<b>Lorazepam</b>	100 micrograms/kg (IV or IO)	Max single dose 4 mg
<b>Adrenaline (IV or IO)</b>	10 micrograms/kg (0.1 mL/kg of 1:10,000 strength)	Max single dose 1 mg
<b>Glucose 10% (IV or IO)</b>	2–5 mL/kg of 10% dextrose	150–160 mL of 10% dextrose single bolus

UK immunisation schedule

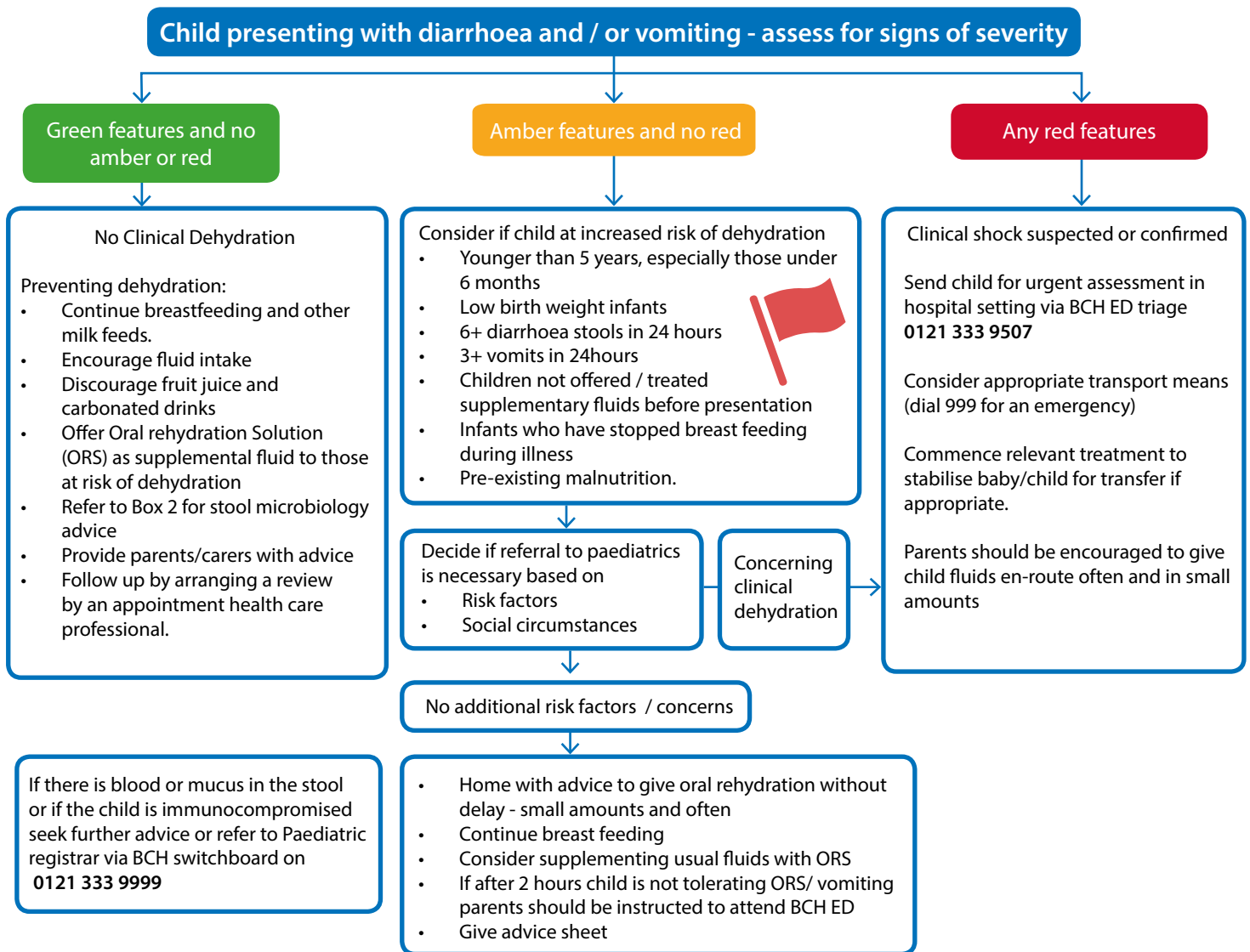
Age of child (months)	Rota virus (oral vaccine)	Diphtheria and tetanus	Pertussus	Polio	Hib	PCV	MenC	MMR	HPV	No. of injections
<b>2 months</b>	✓	✓	✓	✓	✓	✓				2
<b>3 months</b>	✓	✓	✓	✓	✓		✓			2
<b>4 months</b>		✓	✓	✓	✓	✓	✓			3
<b>12 months</b>					✓		✓			1

Neonatal Fluid Requirements

Age	Total volume of fluid required per day (mL/kg)
<b>Day 1</b>	60
<b>Day 2</b>	90
<b>Day 3</b>	120
<b>Day 4 to 28</b>	150

## Clinical Assessment Tool

### Suspected Gastroenteritis in child 0-5 years



**Gastroenteritis Table 1: Traffic light system for identifying signs and symptoms of clinical dehydration and shock**

	Green - low risk	Amber - intermediate risk	Red - High Risk
<b>Activity</b>	<ul style="list-style-type: none"> <li>Responds normally to social cues</li> <li>Content/smiles</li> <li>Stays awake/awakens quickly</li> <li>Strong normal cry/not crying</li> </ul>	<ul style="list-style-type: none"> <li>Altered response to social cues</li> <li>Decreased activity</li> <li>No smile</li> </ul>	<ul style="list-style-type: none"> <li>Not responding to normal social cues</li> <li>Appears ill to a healthcare professional</li> <li>Unable to rouse or if roused does not stay awake</li> <li>Weak, high pitch or continuous cry</li> </ul>
<b>Skin</b>	Normal skin colour Normal turgour	Normal skin colour Warm extremities	Pale/Mottled/Ashen blue Cold extremities
<b>Respiratory</b>	Normal breathing	Tachypnoea*	Tachycardia*
<b>Hydration</b>	CRT less than 2 seconds Moist mucous membranes (except after a drink) Normal urine output	CRT 2-3 seconds Dry mucous membranes (except after a drink) Reduced urine output	CRT longer than 3 seconds
<b>Pulse/Heart Rate</b>	Heart rate normal Peripheral pulse normal	Tachycardia* Peripheral pulse weak	Tachycardia * Peripheral pulses weak
<b>Blood Pressure</b>	Normal	Normal	Hypotensive
<b>Eyes</b>	Normal Eyes	Sunken Eyes	

\*Refer to normal values page 1

CRT - Capillary refill time

Sats- Saturations In Air

## Gastroenteritis Box 1 Features which may suggest diagnoses other than gastroenteritis:

- Temperature of 38°C or higher (younger than 3months)
- Temperature of 39°C or higher (3month or older)
- Shortness of breath or tachypnoea
- Altered conscious state
- Neck-Stiffness
- Abdominal distension or rebound tenderness
- History/Suspicion of poisoning
- Bulging fontanelle (in infants)
- Non-blanching rash
- Blood and / or mucus in stool
- Bilious (green) vomit
- Severe or localised abdominal pain
- History of head injury

## Gastroenteritis Box 2 Stool Microbiology Advice:

### Consider performing stool microbiological investigation if any of the following:

- the child has recently been abroad
- the diarrhoea has not improved by day 7
- fever over 5 days

## Fluid Rehydration Guidelines

The table below gives the normal maintenance fluid based on weight for mild to moderately dehydrated children.

For the first 10kg of weight - 4ml/kg/hour, for the second 10kg - 2ml/kg/hr, for all remaining kg - 1ml/kg/hr.

Parents can use this guideline aiming for 75-100% of the fluid volumes listed below per hour when awake, given gradually over the hour via syringe. Fluid should be clear, ideally oral rehydration solutions e.g. dioralyte.

**If the child is breast fed continue breastfeeding.**

**Seek review if the patient:**

- Is not taking fluids
- Is not keeping fluid down
- Is becoming more unwell
- Has reduced urine output

	Child's weight in Kg	Maintenance fluid volume - ml per hour
	2	8
	3	12
	4	16
	5	20
	6	24
<b>6 months</b>	7	28
	8	32
	9	36
<b>1 year</b>	10	40
	11	42
<b>2 years</b>	12	44
	13	46
<b>3 years</b>	14	48
	15	50
<b>4 years</b>	16	52
	17	54
	18	56
	19	58
	20	60
	21	61
	22	62
	23	62
	24	64
	25	65
	26	66
	27	67
	28	68
	29	69
	30	70

Child's weight in Kg	Maintenance fluid volume - ml per hour
31	71
32	72
33	73
34	74
35	75
36	76
37	77
38	78
39	79
40	80
41	81
42	82
43	83
44	84
45	85
46	86
47	87
48	88
49	89
50	90
51	91
52	92
53	93
54	94
55	95
56	96
57	97
58	98
59	99



Information for Parents / Carers:

## Caring for your child with gastroenteritis





## About Gastroenteritis

Gastroenteritis is an infection of the gut, which causes diarrhoea and / or vomiting. It can lead to dehydration when the body does not have enough water or the right balance of salts to carry out normal functions.

Children at increased risk of dehydration include:

- Young babies under 1 year (especially under 6 months)
- Those born at a low birth weight,
- Those who have stopped drinking/breastfeeding during the illness
- Children with poor growth.

Gastroenteritis is usually caused by a virus and requires no treatment other than plenty of fluids. Antibiotics do not kill viruses.

Sometimes infected food can cause gastroenteritis (food poisoning). Bacteria can cause food poisoning, for example campylobacter and salmonella.

## What are the symptoms of gastroenteritis?

- Diarrhoea, often vomiting as well
- Vomiting can last up to 3 days
- Diarrhoea may continue longer, between 5-7 days after vomiting and can last up to 2 weeks.
- Crampy pains in the abdomen (tummy) are common.
- Dehydration - passing less urine than normal with dry mouth.

## Gastroenteritis Advice Guide:

### How is your child?



**Red**

If your child

- Becomes difficult to rouse / unresponsive
- Becomes pale and floppy
- Is finding it difficult to breathe
- Has cold hands and feet
- Has diabetes

**You need urgent help**

Please phone 999 or go to the nearest Accident and Emergency



**Amber**

If your child

- Seems dehydrated ie. dry mouth, sunken eyes, no tears, sunken fontanelle (soft spot on baby's head), drowsy or passing less urine than normal
- Has blood in the stool (poo) or constant tummy pain
- Has stopped drinking or breastfeeding and / or is unable to keep down fluid
- Becomes irritable or lethargic
- Their breathing is rapid or deep
- Is under 2months old

**You need to contact a doctor or nurse today**

Please ring your GP surgery or call NHS 111 - dial 111



**Green**

- If none of the above features are present, most children with Diarrhoea and / or vomiting can be safely managed at home.

**Self care**

Using the advice in this guide you can provide the care your child needs at home

## How can I help my child?

- Continue to offer your child their usual feeds, including breast or other milk feeds (do not dilute milk feeds). This is in addition to extra rehydration fluid if advised.
- Encourage your child to drink plenty of fluids - little and often, even if your child vomits or feels sick. Any drink is better than none. Oral rehydration solutions (ORS) are best. They provide the perfect balance of water salt and sugar. ORS can be purchased from the counters of large supermarkets and pharmacies. Do not use home made salt drinks as the quantity of salt has to be exact.
- Mixing the contents of ORS sachet into squash (not "sugar free") may improve the taste. Ice lollies are a useful extra source of fluid.
- Do not worry if your child is not interested in solid food, but offer food if hungry. Do not "starve" a child with gastroenteritis.
- If your child has other symptoms like high temperature, neck stiffness or rash please ask for advice from your healthcare professional (or call 111).
- If your child has stomach cramps and pain killers do not help, seek advice. Ibuprofen should not be given if your child has not passed urine or has blood in their stools.
- Hand washing is the best way to stop gastroenteritis spreading.

## After care

Once your child is rehydrated and no longer vomiting:

- Reintroduce the child's usual food.
- If dehydration recurs, start giving ORS again.
- Anti-diarrhoea medicines (also called Antimotility drugs) should not be given to children.

## Preventing the spread of Gastroenteritis

You and/or your child should wash your hands with soap (liquid if possible) in warm running water and then dry them carefully:

- After going to the toilet
- After changing nappies
- Before touching food

Your child should not:

- Share his or her towels with anyone
- Go to school or any other childcare facility until 48 hours after the last episode of diarrhoea and / or vomiting
- Swim in swimming pools until 2 weeks after the diarrhoea has stopped

Name of Child .....

Age ..... Date/Time advice given .....

Further advice / Follow up .....

.....

.....

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.....

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Name of professional .....

Signature of professional .....

## Some Useful Phone Numbers

**GP Surgery** (make a note of the number here)

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**NHS 111 - Dial 111**  
(available 24hrs - 7 days a week)

**GP Out of Hours Service - appointments booked via NHS 111**  
(Open from 6:30pm - 8:30am, 7 days a week)

**For online advice:**  
**NHS Choices** [www.nhs.uk](http://www.nhs.uk)  
(available 24hrs - 7 days a week)

## Urgent Care Centre

### **Warren Farm Urgent Care Centre**

Warren Farm Road, Birmingham, West Midlands, B44 0PU  
8.00am-8.00pm

### **Erdington Health and Wellbeing Walk In Centre**

196 High Street, 1st Floor, Erdington, Birmingham, B23 6SJ  
8.00am-8.00pm

### **Washwood Heath Urgent Care Centre**

Clodeshall Road, Washwood Heath, Birmingham, West Midlands, B8 3SN  
9.00am-9.00pm

### **The Hill Urgent Care Centre**

Sparkhill Primary Care Centre, 856 Stratford Road,  
Sparkhill, Birmingham, B11 4BW  
8.00am-8.00pm

## **South Birmingham GP Walk In Centre**

0121 415 2095

15 Katie Road, Selly Oak, Birmingham, B29 6JG.

8.00am-8.00pm

## **Birmingham NHS Walk In Centre**

0121 255 4500

Lower Ground Floor, Boots The Chemists Ltd,  
66 High Street, Birmingham, West Midlands, B4 7TA

Mon-Fri: 8.00am – 7.00pm (last patient seen at 6:30pm)

Sat: 9.00am – 6.00pm (last patient seen at 5:30pm)

Sun: 1.00am – 4.00pm (last patient seen at 3:30pm)

## **Solihull UCC**

Solihull Hospital, Lode Lane, Solihull, B91 2JL

8.00am-8.00pm

## **Summerfield GP and Urgent Care Centre**

Summerfield Primary Care Centre, 134 Heath Street,  
Winson Green, Birmingham, B18 7AL.

8.00am-8.00pm

**If you require an interpreter, inform the member of staff you are speaking with.**

## Data Protection

### Looking after and sharing information about your child

We have a duty of care to help patients and families understand how information about them is kept and shared and we include the following information in all our patient leaflets:

Information is collected about your child relevant to their diagnosis, treatment and care. We store it in written records and electronically on computer. As a necessary part of that care and treatment we may have to share some of your information with other people and organisations who are either responsible or directly involved in your child's care. This may involve taking your child's information off site. We may also have to share some of your information for other purposes, such as research etc. Any information that is shared in this way will not identify your child unless we have your consent. If you have any questions and/or do not want us to share that information with others, please talk to the people looking after your child or contact PALS (Patient Advice and Liaison Service) on 0121 333 8403.

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### **Birmingham Children's Hospital NHS Foundation Trust**

Steelhouse Lane Birmingham B4 6NH

Telephone 0121 333 9999

Fax: 0121 333 9998

Website: [www.bch.nhs.uk](http://www.bch.nhs.uk)

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