



	Nurse Practitioner CLINICAL PRACTICE GUIDELINE DIARRHOEA +/- VOMITING SYMPTOMS SUGGESTIVE OF GASTROENTERITIS IN PAEDIATRIC PATIENTS	Revive Clinic
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Scope		Outcomes
Nurse Practitioner	Child aged 12 months to 16 years with acute onset of diarrhoea +/- vomiting and very mild to mild dehydration.	Identify patients suitable for NP CPG
Medical Practitioner +/- Nurse Practitioner	Child with moderate to severe dehydration Child with chronic medical problems Bilious vomiting (Green) Severe abdominal pain or abdominal distention Blood in stools or vomitus Absent bowel sounds Altered conscious state including effects of drugs/ ETOH History consistent with collapse Presence of jaundice	Identify patients not suitable for NP CPG and refer to ED or GP.
Assessment & intervention		Outcomes
Primary Survey	<ul style="list-style-type: none"> • Airway • Breathing • Circulation • Disability • Environment 	Abnormal primary survey identified → exit CPG and refer to ED immediately
History	<ul style="list-style-type: none"> • Signs and symptoms of current illness • Duration of illness – days and hours • Frequency of vomits, No/day and colour of vomit • Frequency and volume of stools, No/day and colour and consistency of stools • Oral intake – volume and fluid type, no of breast feeds and how long • Urine output/ number of wet nappies • Abdominal Pain • Level of activity – lethargy/ active • Risk factors- <ul style="list-style-type: none"> - recent travel, (discuss with GP) - immunocompromised, - antibiotic associated (refer to GP) • Allergies / Immunisation status • Relevant past medical history, Delivery, Gestation, Development • Medications 	Identify patients not suitable for NP CPG → exit CPG


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<p>Focused clinical assessment</p>	<ul style="list-style-type: none"> • Weight – If an accurate pre-illness weight is available, calculate deficit from weight loss • Vital Signs • Central Cap Refill • Urinalysis • Level of consciousness / Activity • Mucus membranes • Skin Turgor • Muscle tone • General examination including ENT, Chest • Abdominal assessment • Level of dehydration – see appendix 1 • Vomiting with no diarrhoea is not usually gastroenteritis. Exit CPG and refer to ED. 	<p>Moderate or Severe hydration → exit CPG and refer immediately GP or ED</p>
Working Diagnosis and Investigations		Outcomes
	<p>In most circumstances no investigations are necessary in order to diagnose gastroenteritis or to manage the patient effectively¹. However, identifying the causative agent might be important for patient management (ie infections caused by protozoa) and it is important from a public health perspective (salmonellosis, shigellosis, campylobacteriosis and rotavirus infections are all NOTIFIABLE diseases and <i>C. difficile</i>-associated diarrhoea may soon become notifiable too). Antibiotic susceptibility results for the pathogen may be required for treatment of diarrhoea in selected group of patients.</p>	

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<p>Imaging</p>	<p>Imaging not usually required</p> <ul style="list-style-type: none"> • Abdominal XR may be requested after consultation with EP to exclude Bowel Obstruction or free intra-abdominal gas 	<p>Discuss need for investigations GP or refer to ED</p>
<p>Pathology</p>	<ul style="list-style-type: none"> • Blood tests are not usually required in the mildly dehydrated category. Serum electrolytes are mandatory in any child receiving IV fluid therapy (to obtain antibiotic susceptibility results in case treatment is indicated) and for the purpose of notification to a Public Health unit. • If septic, collecting blood cultures is recommended • Faecal MC&S required only: <ul style="list-style-type: none"> - Suspected epidemic or food poisoning - Severe or prolonged (> 2 weeks) diarrhoea - Recent overseas travel - Child residing in an institution 	<p>Discuss need for investigations with GP or refer to ED</p>
<p style="text-align: center;">Interpretation of Results (diagnostic features) and Management Decisions</p>		<p style="text-align: center;">Outcomes</p>

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<p>Mild dehydration See Appendix 1 No signs of sepsis or indications for alternate diagnosis</p>	<p>NP review with view to discharge if improvement</p> <ul style="list-style-type: none"> • Consider need for Oral re-hydration as tolerated based on age and estimated weight – Utilise Oral Fluids for Children with Gastroenteritis: Clinical Pathway. See Appendix 2 • Reassess after first hour. <ul style="list-style-type: none"> - If tolerating fluids and looking well – Discharge with information sheet. - If tolerating 0.5 ml/kg/5 min <u>and</u> still dehydrated consider increasing fluids to 1 ml/kg per 5 minutes. Children whose parents wish to take them home to continue fluid replacement need to be discussed with GP prior to discharge. - If not tolerating oral re-hydration discuss with GP or refer to ED. • Pt education /health promotion • Consider social situation in view of parent ability to manage child at home. Consider admission if necessary. • Medication prescribed as per formulary • Follow up appointment with GP 	<p>Patient identified as suitable for NP CPG and discharged safely</p>
<p>Travellers Diarrhoea No high fever, no peritoneal signs or focal tenderness, no blood in stool.</p>	<p>NP review with view to discharge</p> <ul style="list-style-type: none"> • Rehydration with oral Rehydration solution • Avoid anti-motility drugs in children • Moderate to severe symptoms – consider antibiotics - see formulary. • Discuss need for Rx Giardia lamblia with EP or SMO – see formulary 	

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Medications		Outcomes
All medication will be stored, labelled and dispensed in accordance with hospital policy and relevant legislation ⁽⁵⁾		
Simple analgesia S2⁽⁶⁾ Mild pain and/or fever	Paracetamol: 15 mg/kg 4 to 6 hourly. Maximum of 4 doses in 24 hours OR Ibuprofen: 10 mg/kg/dose 6 – 8 hourly. Maximum of 4 doses in 24 hours. (over 3 months of age)	Patients given analgesia appropriate to allergies, current medications and past medical history Analgesia requirements determined by ongoing assessment of pain and adequate analgesia provided Patients with excessive pain or pain unrelieved by analgesia need referral to ED
Antibiotics S4⁽⁷⁾ In travellers diarrhoea after discussion with GP	Azithromycin (20 mg/kg up to 1 gm) orally as single dose OR Norfloxacin (20 mg/kg up to 800 mg) orally as single dose Consider the need to treat for Giardia lamblia. Discuss with EP or SMO Tinidazole (50 mg/kg up to 2 gm) orally, as a single dose Or Metronidazole (30 mg/kg up to 2 gm) orally, daily for 3 days	

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Patient Discharge Education		Outcomes
When to return	<ul style="list-style-type: none"> • Verbal instructions from NP re need for clinical re assessment: not tolerating oral fluids, significant increase in vomiting or diarrhoea, decreased urine output, increased lethargy or generally more unwell • Written patient information 	Ensure patient understands problem, treatment, follow up and is safe for discharge home
Follow-up Appointments	<ul style="list-style-type: none"> • Advise patients to see GP in 24 hours, letter provided 	
Discharge Referrals	<ul style="list-style-type: none"> • As appropriate to allied health team members 	
Medication Education	<ul style="list-style-type: none"> • Verbal instructions from NP • Contact Pharmacist to provide medication education for patient when available. 	
Certificates	<ul style="list-style-type: none"> • Absence from work certificates 	

References	
<ol style="list-style-type: none"> 1. <i>Diarrhoea and Vomiting Clinical Practice Guidelines</i>. Royal Children's Hospital Melbourne. Accessed Nov 2007 from http://www.rch.org.au 2. <i>Gastroenteritis. Guidelines for Management of Acute Diarrhoea in Children</i>. Princess Margaret Hospital for Children. Perth. Accessed Nov 2007 from PMH. 3. <i>Oral Fluids for Children with Gastroenteritis: Clinical Pathway</i>. Joondalup Health Campus Emergency Department. Accessed Nov 2007. 4. <i>Nurse Practitioner Clinical Practice Guidelines for the Management of Gastroenteritis</i>. Sydney West Area Health Service. Accessed Nov 2007 from http://www.heqalth.nsw.gov.au 5. eMIMS 2006. [cited 2007 Nov]. 6. eTG 2006. Cited [2008]. 	


CPG- Clinical Practice Guideline DVA- Department of Veteran Affairs EP- Emergency Physician PS- Pain Score S1-S4- Schedule of the drug administration ac	Appendix 1 - Assess Severity of Dehydration Appendix 2 – Oral Fluids based on age and estimated weight
Date written: Nov 2008	Review date: Nov 2011

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Appendix 1

Assess Severity of Dehydration

Level of Hydration	% of Body Weight	Symptoms	Signs
SEVERE	≥ 10%	Decreased urine output Thirst Lethargy	Poor perfusion Tachycardia Reduced skin Turgor Sunken eyes – no tears Decreased muscle tone (floppy) Deep respirations
MODERATE	7 – 8 %	Decreased urine output Thirst Lethargy	Tachycardia Altered neurological status Reduced skin Turgor Sunken eyes
MILD	5%	Decreased urine output Thirst	Dry mucus membranes Mild tachycardia
VERY MILD	3 %	Decreased urine output Thirst	No clinical signs

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Appendix 2

Oral Fluids based on Age and Estimated Weight

Age	Estimated Weight (kg)	‘Maintenance’ Fluid Volumes (ml per 5 min) 0.5 ml/kg/5min	Rapid Rehydration Fluid Volumes (ml per 5 min) 1 ml/kg/5 min
6 months	6	3 ml	6
9 months	8	4 ml	8
12 months	10	5 ml	10
2 years	12	6 ml	12
3-4 years	15	7 ml	15
5-7 years	20	10 ml	20
8-9 years	25	12 ml	25
10 – 12 years	30	15 ml	30
13 – 16 years	45	22 ml	45

Preferred fluid is ORS (Gastrolyte/Pedialyte) via syringe or cup

2nd best is water

3rd best is ORS ‘Icy Pole’ – smaller volumes generally administered by this method.