Worcestershire Acute Hospitals NHS Trust

Guideline for Prescribing Proton Pump Inhibitors (PPI) in Neonates, Children and Young People

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This guideline provides recommendations for clinicians with regards to the safe and effective prescribing of proton pump inhibitors (PPIs) in neonates, children and young people within the Worcestershire Acute Hospitals NHS Trust.

This guideline is for use by the following staff groups:
All qualified healthcare professionals involved in the care of paediatric patients.

	Lead Clinician(s)
Ke Xin Tan	Rotational Specialist Pharmacist
Louise Williams	Lead Pharmacist in Women's & Children's Division
Dr Clare Onyon	Consultant Paediatrician
Approved by Paediatric Governance on:	15th October 2025
Approved by Medicines Safety Committee on: *Where medicines are included in document.*	12th November 2025
Review Date: This is the most current document and should be used until a revised version is in place	15th October 2028

Key amendments to this guideline

Date	Amendment	Approved by:

Table of Contents

1. Introduction

Proton pump inhibitors (PPIs) are commonly used in the management of acid-related gastrointestinal disorders. The main indications for PPI use in neonates, children and young people include:

- Gastro-oesophageal reflux disease (GORD) that has not responded to initial management strategies such as feed thickening agents or antacids
- Persistent or severe symptoms of reflux oesophagitis despite other conservative or pharmacological measures
- Prevention or treatment of peptic ulceration, particularly in children receiving long-term corticosteroids or non-steroidal anti-inflammatory drugs (NSAIDs)
- As part of a Helicobacter pylori eradication regimen

PPI therapy should be initiated only when clinically indicated and should be reviewed regularly to assess ongoing need, ensure dose optimisation or reduction where appropriate and confirm that the formulation remains suitable for the patient's age and route of administration.

A financial report conducted within our Trust in 2025 highlighted significant cost variations between available PPI formulations. Liquid preparations, often used historically in neonates, children and young people, are substantially more expensive than solid dosage forms such as dispersible tablets or capsules. Where clinically appropriate, the use of these more cost-effective formulations should be prioritised to reduce unnecessary expenditure and promote sustainable prescribing practices.

2. Aim/Objectives

The aim of this guideline is to:

- Standardise prescribing practices for proton pump inhibitors in paediatric patients
- Ensure paediatric patients receive appropriate, effective and evidence-based treatment
- Promote safe prescribing, including appropriate dose selection, formulation choice, and regular review of therapy
- Reduce inappropriate or prolonged PPI use, minimising potential adverse effects
- Optimise cost-effectiveness by prioritising solid oral formulations (e.g., dispersible tablets, capsules) where clinically appropriate, thereby limiting reliance on higher-cost liquid preparations and supporting the organisation's financial sustainability.

3. Treatment Summary

3.1 For Patients Taking Medicines Orally

Age	Preparation	Dose	Additional information
Up to 1 year	**1st line:** Omeprazole 10mg/5ml oral suspension **Use for doses <5mg** **OR** Omeprazole dispersible 10mg tablets (Losec MUPS) **5mg lowest measurable dose**	700 micrograms/kg to 3mg/kg once a day (max per dose 20mg) **Doses must be rounded to the nearest 5mg for MUPS**	Licensed

	2nd line: Lansoprazole orodispersible tablets **3.75mg lowest measurable dose**	0.5-1mg/kg once a day (max per dose 15mg) **Doses must be rounded to the nearest 3.75mg for Lansoprazole orodispersible 15mg tablets**	Not licensed in children but may be more palatable.
≥1 year	**1st line:** Omeprazole dispersible 10mg tablets (Losec MUPS) **5mg lowest measurable dose** **OR** Omeprazole 10mg or 20mg capsules **Use for doses of 10mg or 20mg and if patient can tolerate capsules**	<20kg: 10mg once a day (increased to max 20mg) ≥20kg: 20mg once a day (increased to max 40mg)	Licensed
	2nd line: Lansoprazole orodispersible tablets **3.75mg lowest measurable dose**	<30kg: 0.5-1mg/kg (max per dose 15mg) ≥30kg: 15-30mg once a day **Doses must be rounded to the nearest 3.75mg for Lansoprazole orodispersible 15mg tablets**	Not licensed in children but may be more palatable.

3.2 For Patients with An Enteral Feeding Tube

Feeding Tube Bore	Preparation	Dose	Additional information
<8Fr	**1st line:** Omeprazole 10mg/5ml oral suspension	<1 year: 700 micrograms/kg to 3mg/kg once a day (max per dose 20mg) 1-17 years with 10-19kg: 10mg once a day, max 20mg 1-17 years with ≥20kg: 20mg once a day, max 40mg	Licensed
≥8Fr	**1st line:** Omeprazole 10mg/5ml oral suspension **Use for doses <5mg** **OR** Omeprazole dispersible 10mg tablets (Losec MUPS[2]) **5mg lowest measurable dose**	<1 year: 700 micrograms/kg to 3mg/kg once a day (max per dose 20mg) 1-17 years (10-19kg): 10mg once a day, max 20mg 1-17 years (≥20kg): 20mg once a day, max 40mg **Doses must be rounded to the nearest 5mg for MUPS or the nearest 10mg for capsules**	Licensed Off label use[1]
	2nd line: Lansoprazole orodispersible tablets (Zoton Fastabs[2]) **3.75mg lowest measurable dose**	<30kg: 0.5-1mg/kg (max per dose 15mg) ≥30kg: 15-30mg once a day **Doses must be rounded to the nearest 3.75mg for Zoton FasTabs**	Off label use[1]
	3rd line: Esomeprazole 10mg GR granules (Nexium[2]) **Use for doses of 10mg or 20mg**	1-11 years (10-19kg): 10mg once a day 1-11 years (≥20kg): 10-20mg once a day 12-17 years: 40mg once a day for 4 weeks then 20mg once a day as maintenance dose.	Licensed

[1]. Off label means the medication is being used in a way that is different to the product's license, e.g. use outside the licensed age range.

[2]. Please be aware that administration of other brands/generics differ and may lead to tube blockage.

4. Administration Instructions

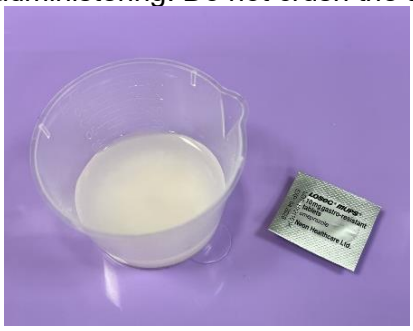
Refer to the PPI administration leaflet for detailed, parent-friendly guidance. A summary for healthcare professionals is provided below.

4.1 For Patients Taking Medicines Orally

a) **Omeprazole oral suspension**

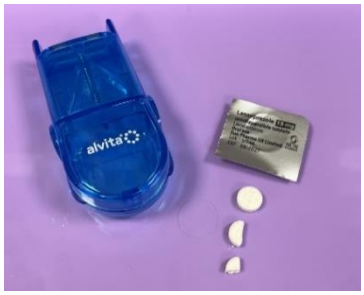
Shake the bottle well before use. Use an oral syringe to measure the dose accurately.

b) **Omeprazole dispersible tablets (Losec MUPS®)**:
The 10 mg tablets may be halved using a tablet cutter to give a 5mg dose but must not be divided further. Disperse the whole or half tablet in 10 mL of water for 5-10 minutes and mix well before administering. Do not crush the tablets.



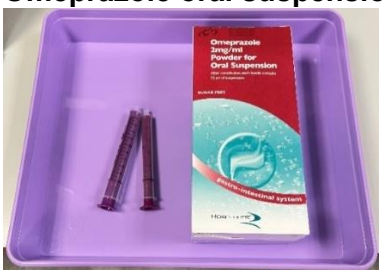
c) **Omeprazole capsules**:
Swallow the capsule whole with water, juice or squash. If the patient cannot swallow the capsule, open it and mix the contents with a small amount of soft food (e.g. yogurt, honey [not to be given if <1 year], or jam). Ensure the contents are swallowed immediately without chewing.

d) **Lansoprazole orodispersible tablets**:
The 15 mg tablets may be halved to give 7.5 mg or quartered to give 3.75 mg using a tablet cutter but must not be divided further. The tablet (whole, half, or quarter) can be placed directly on the patient's tongue and allowed to dissolve over approximately one minute or gently sucked until dispersed. Alternatively, the tablet may be swallowed whole with water, but it should not be chewed. If preferred, the tablet can be dispersed in a small volume of water, stirred well and administered immediately using a spoon or oral syringe.



4.2 For Patients with An Enteral Feeding Tube

a) **Omeprazole oral suspension**:

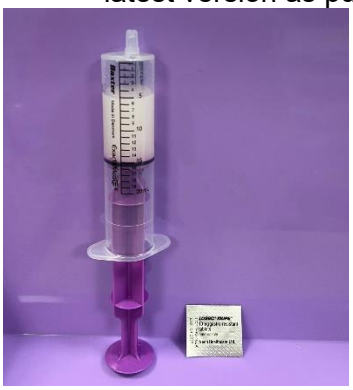


Shake the bottle well before use. Use an oral syringe to measure the correct dose and administer through the feeding tube. Flush the tube with 10 mL of water afterwards.

b) **Omeprazole dispersible tablets (Losec MUPS®)**:
The 10 mg tablets may be halved using a tablet cutter to give a 5 mg dose but must not be divided further.

1. Pull the plunger out of the barrel of a 20mL syringe and place the tablet (whole or half) inside.

2. Replace the plunger and draw up 10mL water with the tip of the syringe (sterile water if <6 months).
3. Hold the syringe upright. Draw up about 5mL of air and shake the syringe for 1-2 minutes to disperse the granules.

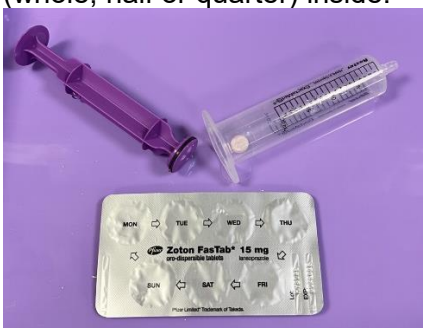


4. Keep the syringe tip upright and expel the air.
5. Attach the syringe to the enteral tube and administer using a push-pull technique to keep the granules suspended.
6. Refill the syringe with the same amount of water, shake and flush the remaining contents down the enteral tube.
7. Rinse the syringe and flush the tube with water (sterile water if <6 months).

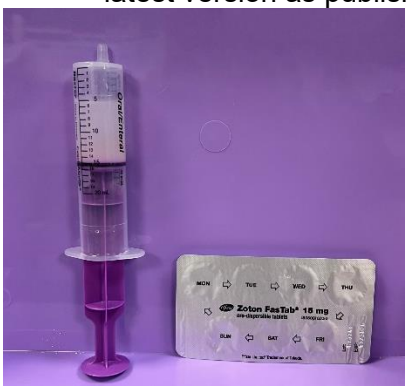
NB. Losec MUPS® can block feeding tubes if not flushed properly.

c) **Lansoprazole orodispersible tablets (Zoton FasTabs®)**:
The 15 mg tablets may be halved to give 7.5 mg or quartered to give 3.75 mg using a tablet cutter but must not be divided further.

1. Pull the plunger out of the barrel of a 20mL syringe and place the tablet (whole, half or quarter) inside.



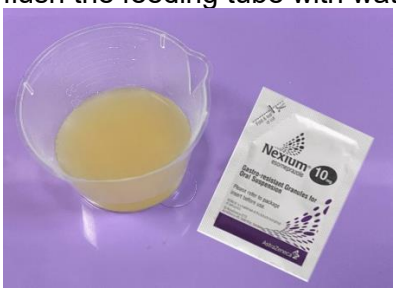
2. Replace the plunger and draw up 10mL water with the tip of the syringe (sterile water if <6 months).
3. Hold the syringe upright. Draw up about 5mL of air and shake the syringe for 30-60 seconds to disperse the granules.



4. Keep the syringe tip upright and then expel the air.
5. Attach the syringe to the enteral tube and using a push-pull technique to keep the granules suspended.
6. Refill the syringe with the same amount of water, shake and flush the remaining contents down the enteral tube.
7. Rinse the syringe and flush the tube with water (sterile water if <6 months).

NB. Zoton FasTabs® can block feeding tubes if not flushed properly.

d) **Esomeprazole granules sachets (Nexium®)**:
Each 10mg sachet of esomeprazole granules should be dispersed in 15ml water (use 30mL of water for 20mg dose and 60mL of water for 40mg dose). Stir the mixture and allow it to thicken for a few minutes. Stir again before drawing the full volume into a syringe. Attach the syringe to the enteral tube and administer the dose immediately. Then, refill the syringe with the same amount of water, shake well and flush the remaining granules down the enteral tube. Finally, rinse the syringe and flush the feeding tube with water.



Monitoring

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the Policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: (Responsible for also ensuring actions are developed to address any areas of non-compliance)	Frequency of reporting:
	WHAT?	HOW?	WHEN?	WHO?	WHERE?	WHEN?
Section 2	Promote safe prescribing, including appropriate dose selection, formulation choice, and regular review of therapy	Retrospective audit of PPI prescriptions in paediatric inpatients and outpatients to assess indication, dose appropriateness, formulation used and financial impact.	Annually	Rotational Paediatric pharmacist	Summary reports to be reviewed by Lead Pharmacist in Women's & Children's Division.	Annually

References

BNF for Children. Available at: https://bnfc.nice.org.uk/ [Accessed 9 Jul. 2025].

Herefordshire and West Essex Integrated Care System (2021). *Prescribing Guidelines for Proton Pump Inhibitor (PPI) - Use in Paediatric Patients*. [online] Available at: https://www.hweclinicalguidance.nhs.uk/all-clinical-areas-documents/download?cid=173&checksum=f7e6c85504ce6e82442c770f7c8606f0.

Medicines and Healthcare products Regulatory Agency (2014). *Off-label or Unlicensed Use of medicines: Prescribers' Responsibilities*. [online] Available at: https://www.gov.uk/drug-safety-update/off-label-or-unlicensed-use-of-medicines-prescribers-responsibilities.

NEWT guidelines. Available at: https://www.newtguidelines.com/ [Accessed 9 Jul. 2025].

NHS Greater Glasgow and Clyde (2021). *Proton Pump Inhibitor Guideline for Neonates and Paediatrics*. [online] Available at: https://clinicalguidelines.scot.nhs.uk/media/2849/proton-pump-inhibitor-guideline-for-neonates-and-paediatrics.pdf.

NHS South East London (2024). *Paediatric Proton-Pump Inhibitor (PPI) Prescribing Guideline for South East London Administration Recommendations*. [online] Available at: https://www.selondonics.org/wp-content/uploads/dlm_uploads/Paediatric-PPI-prescribing-pathway-June-2024-updated.pdf.

Royal College of Paediatrics and Child Health (RCPCH), Neonatal and Paediatric Pharmacists Group (NPPG) and WellChild. *Medicines for Children*. [online] Available at: https://www.medicinesforchildren.org.uk/.

Summary of Product Characteristics. Available at: https://www.medicines.org.uk/emc [Accessed 9 Jul. 2025].

White, R. and Bradnam, V. (2015). *Handbook of Drug Administration via Enteral Feeding Tubes*. 3rd ed.

Contribution List

This key document has been circulated to the following individuals for consultation:

Name	Designation
Louise Williams	Lead Pharmacist in Women's & Children's Division
Dr Clare Onyon	Consultant Paediatrician

This key document has been circulated to the chair(s) of the following committee's / groups for comments:

Committee
Paediatric Governance
Medicines Safety Committee

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form

Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	✓	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	Dr Clare Onyon

Details of individuals completing this assessment	Name	Job title	e-mail contact
	Ke Xin Tan	Rotational Specialist Pharmacist	kexin.tan@nhs.net
Date assessment completed	11-08-2025		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	Title: Guideline for Prescribing Proton Pump Inhibitors (PPI) in Paediatric Patients
What is the aim, purpose and/or intended outcomes of this Activity?	- Standardise prescribing practices for proton pump inhibitors in paediatric patients - Ensure children receive appropriate, effective and evidence-based treatment - Promote safe prescribing, including appropriate dose selection, formulation choice, and regular review of therapy - Reduce inappropriate or prolonged PPI use, minimising potential adverse effects - Optimise cost-effectiveness by prioritising solid oral formulations (e.g., dispersible tablets, capsules) where clinically appropriate,

	thereby limiting reliance on higher-cost liquid preparations and supporting the organisation's financial sustainability.				
Who will be affected by the development & implementation of this activity?	❑ x x ❑	Service User Patient Carers Visitors	x ❑ ❑ ❑	Staff Communities Other _____	
Is this:	x Review of an existing activity ❑ New activity ❑ Planning to withdraw or reduce a service, activity or presence?				
What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	See reference list. There is no specific information for equality impact in the implementation of this guideline that is relevant for a review.				
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	See contribution list. No barriers identified or relevant to this guideline at present therefore no specific consultation about equality impact undertaken. The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of any equality groups as listed below.				
Summary of relevant findings	No barriers or impact identified.				

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age		x		The guideline covers all paediatric patients (≤17 years) with acid-related gastrointestinal disorders.
Disability		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of disability.
Gender Reassignment		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of gender reassignment.
Marriage & Civil Partnerships		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of marriage and civil partnerships.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Pregnancy & Maternity		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of pregnancy and maternity.
Race including Traveling Communities		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of race.
Religion & Belief		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of religion and belief.
Sex		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of sex.
Sexual Orientation		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of sexual orientation.
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of any vulnerable or disadvantaged group characteristics.
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)		x		The guideline covers all paediatric patients with acid-related gastrointestinal disorders irrespective of health inequalities.

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
	N/A			
How will you monitor these actions?				
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)				

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	Ke Xin Tan 
Date signed	10/07/2025
Comments:	
Signature of person the Leader Person for this activity	
Date signed	03/10/2025
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.