

## FAO: Primary Care colleagues in North Yorkshire and York

# Medicines Management Prescribing Focus – January 2023

## Using Standardised Strengths of Unlicensed Liquid Medicines in Children

### Summary

The Neonatal Paediatric Pharmacists Group (NPPG) and the Royal College of Paediatrics and Child Health (RCPCH) strongly recommend that when children require liquid medications, they should receive the RCPCH and NPPG recommended concentration, where one exists.

There are currently 12 such recommended products, detailed in the table below.

By standardising the prescribed concentration of these medicines, we will reduce the risk of errors being made in the doses given to children and prevent hospitalisation from accidental under and overdoses.

### Standard concentrations which should be prescribed:

BNF Chemical Substance	BNF Code	Strength/Concentration	Common description of strength/product
<b>Azathioprine</b>	0802010G0	10mg/ml	Azathioprine 50mg/5ml
<b>Chloral hydrate</b>	0401010B0	100mg/ml	Chloral Hydrate 500mg/5ml
<b>Clopidogrel*</b>	0209000C0	5mg/ml	*Clopidogrel concentration agreed, but as no monograph for this drug exists in the BNFC it is not included there.
<b>Ethambutol hydrochloride</b>	0501090H0	80mg/ml	Ethambutol 400mg/5ml
<b>Hydrocortisone</b>	0603020J0	1mg/ml	Hydrocortisone 5mg/5ml
<b>Isoniazid</b>	0501090K0	10mg/ml	Isoniazid 50mg/5ml
<b>Phenobarbital alcohol-free</b>	0408010N0	10mg/ml	Phenobarbital 50mg/5ml
<b>Phenobarbital sodium</b>	0408010P0	10mg/ml	Phenobarbital 50mg/5ml
<b>Pyrazinamide</b>	0501090N0	100mg/ml	Pyrazinamide 500 mg/5ml
<b>Sertraline hydrochloride</b>	0403030Q0	10mg/ml	Sertraline 50mg/5ml
<b>Sodium chloride**</b>	0902012L0	292mg/ml	** A licensed sodium chloride 1mmol/mL is available, though this is not considered suitable for general use due to the dose volumes patients would be required to receive. Alternative description 292mg/ml = sodium chloride 5mmol/ml
<b>Spirolactone</b>	0202030S0	10mg/ml	Spirolactone 50mg/5ml
<b>Tacrolimus</b>	0802020T0	1mg/ml	Tacrolimus 5mg/5ml

## Action Required

Practices are requested to review the prescribing data, as per ePACT2 data (see Appendix 1) and identify any patients that are being prescribed **non-standardised strengths**, review these patients and consider if it would be appropriate to change to a standard strength product.

The practice will need to search for all patients, <18 years, on ALL strengths of the above medicines in a liquid form.

## Important Points to Note

It may seem obvious to state but changing the concentration of the liquid will require a change in directions/volume to be taken by the patient. For example, a patient requires sertraline, their dose is 50mg daily.

### Some options:

Drug	Dose	Product	Directions <i>*Note the volume to be taken/administered changes</i>
Sertraline	50mg od	Sertraline 100mg/5ml oral suspension	2.5ml od
Sertraline	50mg od	Sertraline 25mg/5ml oral suspension	10ml od
Sertraline	50mg od	Sertraline 50mg/5ml oral suspension Preferred/standard concentration = same as 1mg/1ml	5ml od

- Prescribers need to ensure the new directions/volume is a logical/sensible dose that the patient/carer can take/administer. We would advise that a prescriber seeks a second check from another prescribing colleague when changing the product to ensure the right dose is given. This change and the rationale for the change need to be clearly documented in the notes.
- The strength of liquid preparations and the dose should be clearly stated. Please refer to the [BNF guidance on prescription writing](#) for more information if required.
- There are many oral liquid products available – differing concentrations, oral solutions, oral suspensions etc., making it a somewhat confusing area of prescribing. In addition to considering the standard concentration that should be prescribed as listed above, please also consider:
  - if the product is licensed or unlicensed,
  - if it contains any alcohol,
  - if it contains any sugar, and
  - if it is readily available.

Further information on prescribing unlicensed medicines is available from the MHRA [here](#) and the NPPG [here](#). If you require any further advice on which product to prescribe, please contact the Medicines Management Team via RxLine email (see below).

- There are two options for administering oral liquid preparations – 5ml spoons OR oral syringes. The standard oral syringe supplied is 5ml, with 0.5ml graduations. Other,

different size oral syringes are available – liaise with the dispensing contractor regarding the most appropriate option.

- If, after review, a decision is made, in collaboration with the patient or their carer, to change the strength of the medicine to a standard strength, please ensure that a full conversation has occurred with the patient/carer AND the dispensing contractor regarding the change made to the concentration of the liquid and subsequent change in directions/volume.
- Due to the high risk relating to changing paediatric doses, **it is not appropriate to text or write to the patient/carer regarding any changes** to medication. It is also important to ensure the dispensing contractor is aware of the change, as they can further counsel the patient/carer to ensure they understand the new directions/volume change.
- If, after review, a decision is made not to change the concentration of the liquid, this should be documented in the patient's clinical record, with a full explanation of the rationale for not changing the product to a standard strength product.
- We are aware that some specialist children's centres currently do not follow the NPPG and the RCPCH standard strengths for liquid medicines in children and for these patients, this will make the review more difficult. We are in discussions with the specialist children's centres regarding the consideration of changing to the standard strengths. However, in the meantime, if a specialist has recommended a non-standard strength product and you feel it would be more appropriate to be changed to a standardised strength, please contact the North Yorkshire and York Medicines Management Team via RxLine email (see below) and we will support you with this on a case-by-case basis.
- During this review, it is also an ideal time to consider if the patient needs a liquid medicine at all and whether they could be changed to an alternative tablet/capsule formulation. Tablets/capsules have numerous advantages over liquid formulations for all parties concerned:
  - For children and young people: tablets/capsules are less sickly and contain less sugar and children who swallow tablets/capsules tend to have better adherence to their medication regimen
  - For carers: tablets/capsules have a longer shelf-life, do not require a fridge for storage, are easier to transport and are more readily available in local pharmacies
  - For prescribers: less prone to errors when writing prescriptions and can prescribe larger quantities
  - For pharmacists: tablets/capsules are more commonly stocked in local pharmacies compared to suspensions

Swallowing tablets/capsules is an important life skill for children to learn and an e-learning session has been developed to help healthcare professionals and carers teach children and young people how to swallow tablets/capsules. The website also contains resources to accompany the e-learning session: <https://www.elfh.org.uk/programmes/kidzmed/>

Another helpful resource is: <https://www.medicinesforchildren.org.uk/advice-guides/giving-medicines/how-to-give-medicines-tablets/>

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Please review the prescribing data for your Practice – see: Appendix 1.

Please share the information in this document with all relevant members of staff in the Practice.

For any queries or feedback on this month's prescribing focus please contact the respective teams via: [nyccq.rxline@nhs.net](mailto:nyccq.rxline@nhs.net) (North Yorkshire) or [hnyicb-voy.rxline@nhs.net](mailto:hnyicb-voy.rxline@nhs.net) (York).

The MMT welcomes further ideas and suggestions that you and colleagues may wish to recommend for future prescribing focus editions.

Many thanks,

**North Yorkshire and York Medicines Management Team**

## Further Information/Background

Liquid medicines are commonly prescribed for children. For many drugs, there is a range of different concentrations of liquid available, leading to the potential for dosing errors if the concentration is changed and parents and carers do not adjust the volume to be given accordingly. Although unlicensed liquid “Specials” are the most variable in terms of the range of concentrations available, there are also a significant number of drugs for which there is a range of licensed liquid concentrations in use.

Dosing errors arising from inadvertent switching between liquid concentrations or planned switches being incorrectly understood by parents and carers are reported in the literature and in the NHS National Learning and Reporting System (NRLS).

With the aim of improving patient safety, the UK Neonatal and Paediatric Pharmacists Group (NPPG) and the Royal College of Paediatrics and Child Health (RCPCH) have published [this document](#), first published in 2018, which focuses on drugs for which there isn't a licensed liquid product available. However, it is planned that the list will expand during 2023 to include recommended concentrations for licensed products as well as an extended range of unlicensed products.

## NHSBSA ePACT2 Dashboard

NHSBSA have created a dashboard on ePACT2 which will enable staff working in GP practices to determine the extent to which liquid medicines prescribed for patients under the age of 18 follow the nationally recommended concentration for each drug. This helps prescribers, prescribing advisors and other members of the team identify patients on non-standard concentrations and review them with a view to switching to the national standard, where appropriate.

The ePACT2 dashboard considers the number of items prescribed to all patients over a 12-month period for liquids, oral solutions and oral suspensions, with the standard strengths as the numerator and all other strengths are non-standard, as the denominator.

Practices can log-on to ePACT2 and check their own data - [Children's Standard Liquid Concentration dashboard | NHSBSA](#)

## References

<http://nppg.org.uk/standardised-strengths-of-liquid-medicines-for-children/>

<http://nppg.org.uk/wp-content/uploads/2022/05/NPPG-Position-Statement-18-01-V8-May-2022.pdf>

<https://datawarehouse.nhsbsa.nhs.uk/analytics/saw.dll?Dashboard> (log-on required)

## Appendix 1 – Data for North Yorkshire and York

Data – 12 months: November 21 – October 22

Highlighted in yellow = prescribing of **NON-STANDARD** strengths in items i.e. please review prescribing.

Azathioprine				
PCN	Practice	Count of Patients	Standard Strength Items	Non-standard Strength Items
PRIORY MEDICAL GROUP YORK PCN	PRIORY MEDICAL GROUP (B82005)	1	13	0
<b>No azathioprine for N. Yorkshire</b>				
Chloral Hydrate				
PCN	Practice	Count of Patients	Standard Strength Items	Non-standard Strength Items
WEST OUTER AND NORTH EAST YORK PCN	HAXBY GROUP PRACTICE (B82026)	1	3	6
YORK EAST PCN	MY HEALTH GROUP (B82080)	1	0	7
YORK EAST PCN	POCKLINGTON GROUP PRACTICE (B81036)	1	4	0
SELBY TOWN PCN	POSTERNGATE SURGERY (B82074)	1	0	12
TADCASTER AND SELBY RURAL PCN	SHERBURN GROUP PRACTICE (B82031)	1	3	0
TADCASTER AND SELBY RURAL PCN	TADCASTER MEDICAL CENTRE (B82105)	1	14	1
Chloral Hydrate				
PCN	Practice	Count of Patients	Standard Strength Items	Non-standard Strength Items
SCARBOROUGH CORE PCN	BROOK SQUARE SURGERY (B82088)	1	10	0
RICHMONDSHIRE PCN	CATTERICK VILLAGE SURGERY (B82023)	2	24	0
RICHMONDSHIRE PCN	QUAKERS LANE SURGERY (B82034)	1	0	1
RIPON & MASHAM PCN	RIPON SPA SURGERY (B82010)	2	4	0
FILEY AND SCARBOROUGH PCN	SCARBOROUGH MEDICAL GROUP (B82054)	1	13	0
WHITBY COAST & MOORS PCN	WHITBY GROUP PRACTICE (B82017)	1	12	0
<b>Clopidogrel</b>		<b>ZERO</b>		
<b>Ethambutol</b>		<b>ZERO</b>		

<b>Hydrocortisone</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
NORTH RIDING HEALTHY COMMUNITY PCN	DERWENT PRACTICE (B82025)	1	2	0
RIPON & MASHAM PCN	DR AKESTER & PARTNERS (B82030)	1	1	0
SCARBOROUGH CORE PCN	EASTFIELD MEDICAL CENTRE (B82024)	2	12	0
FILEY AND SCARBOROUGH PCN	SCARBOROUGH MEDICAL GROUP (B82054)	2	2	0
HEART OF HARROGATE PCN	THE MOSS PRACTICE (B82013)	2	17	0
<b>Hydrocortisone</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
YORK CITY CENTRE PCN	DALTON TERRACE SURGERY (B82021)	1	7	0
YORK EAST PCN	POCKLINGTON GROUP PRACTICE (B81036)	1	7	0
PRIORY MEDICAL GROUP YORK PCN	PRIORY MEDICAL GROUP (B82005)	1	3	0
TADCASTER AND SELBY RURAL PCN	SHERBURN GROUP PRACTICE (B82031)	1	5	0
<b>Isoniazid</b>				
	<b>ZERO</b>			
<b>Phenobarbital</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
SCARBOROUGH CORE PCN	CASTLE HEALTH CENTRE (Y02669)	1	5	0
HAMBLETON NORTH PCN	MOWBRAY HOUSE SURGERY (B82050)	1	0	9
<b>No phenobarbital for York</b>				
<b>Pyrazinamide</b>				
	<b>ZERO</b>			
<b>Sertraline</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
NORTH RIDING HEALTHY COMMUNITY PCN	AYTON AND SNAINTON MEDICAL PRACTICE (B82063)	1	0	1
SCARBOROUGH CORE PCN	CENTRAL HEALTHCARE (B82038)	2	15	0

NORTH RIDING HEALTHY COMMUNITY PCN	DERWENT PRACTICE (B82025)	2	12	13
WHITBY COAST & MOORS PCN	EGTON SURGERY (B82062)	1	3	0
HAMBLETON SOUTH PCN	GLEBE HOUSE SURGERY (B82066)	1	0	9
FILEY AND SCARBOROUGH PCN	HUNMANBY SURGERY (B82628)	1	0	1
RICHMONDSHIRE PCN	QUAKERS LANE SURGERY (B82034)	3	4	7
FILEY AND SCARBOROUGH PCN	SCARBOROUGH MEDICAL GROUP (B82054)	1	0	1
RICHMONDSHIRE PCN	SCORTON MEDICAL CENTRE (B82035)	2	0	12
HEART OF HARROGATE PCN	THE LEEDS ROAD PRACTICE (B82012)	3	20	8
HEART OF HARROGATE PCN	THE MOSS PRACTICE (B82013)	2	9	0
MOWBRAY SQUARE PCN	THE SPA SURGERY (B82027)	1	1	1
WHITBY COAST & MOORS PCN	WHITBY GROUP PRACTICE (B82017)	1	0	1
<b>Sertraline</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
SELBY TOWN PCN	BEECH TREE SURGERY (B82041)	3	11	13
YORK EAST PCN	ELVINGTON MEDICAL PRACTICE (B82081)	6	28	0
WEST OUTER AND NORTH EAST YORK PCN	FRONT STREET SURGERY (B82100)	1		1
WEST OUTER AND NORTH EAST YORK PCN	HAXBY GROUP PRACTICE (B82026)	1	1	0
YORK CITY CENTRE PCN	JORVIK GILLYGATE PRACTICE (B82098)	3	13	4
SOUTH HAMBLETON & RYEDALE PCN	PICKERING MEDICAL PRACTICE (B82033)	1	2	0
YORK EAST PCN	POCKLINGTON GROUP PRACTICE (B81036)	1	1	15
SELBY TOWN PCN	POSTERNGATE SURGERY (B82074)	2	1	1
SELBY TOWN PCN	SCOTT ROAD MEDICAL CENTRE (B82097)	2	1	9
TADCASTER AND SELBY RURAL PCN	SHERBURN GROUP PRACTICE (B82031)	1	13	0
SOUTH HAMBLETON & RYEDALE PCN	TOLLERTON SURGERY (B82064)	1	3	0
YORK MEDICAL GROUP PCN	YORK MEDICAL GROUP (B82083)	3	1	19



<b>Sodium Chloride</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
SELBY TOWN PCN	BEECH TREE SURGERY (B82041)	2	33	0
WEST OUTER AND NORTH EAST YORK PCN	HAXBY GROUP PRACTICE (B82026)	1	0	2
TADCASTER AND SELBY RURAL PCN	SHERBURN GROUP PRACTICE (B82031)	1	0	8
<b>Sodium Chloride</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
NORTH RIDING HEALTHY COMMUNITY PCN	DERWENT PRACTICE (B82025)	3	0	14
HAMBLETON SOUTH PCN	GLEBE HOUSE SURGERY (B82066)	1	0	10
FILEY AND SCARBOROUGH PCN	HUNMANBY SURGERY (B82628)	1	2	0
HAMBLETON NORTH PCN	MOWBRAY HOUSE SURGERY (B82050)	1	0	13
FILEY AND SCARBOROUGH PCN	SCARBOROUGH MEDICAL GROUP (B82054)	1	0	1
HAMBLETON SOUTH PCN	THIRSK DOCTORS SURGERY (B82049)	1	0	6
WHITBY COAST & MOORS PCN	WHITBY GROUP PRACTICE (B82017)	1	0	9
<b>Spirolactone</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
SCARBOROUGH CORE PCN	BROOK SQUARE SURGERY (B82088)	1	3	0
KNARESBOROUGH & RURAL PCN	CHURCH LANE SURGERY (B82032)	1	10	0
NORTH RIDING HEALTHY COMMUNITY PCN	DERWENT PRACTICE (B82025)	1	0	1
NORTH RIDING HEALTHY COMMUNITY PCN	DERWENT PRACTICE (B82025)	2	2	1
RIPON & MASHAM PCN	DR INGRAM & PTRS (B82036)	1	1	0
HAMBLETON SOUTH PCN	GLEBE HOUSE SURGERY (B82066)	1	6	0
HAMBLETON SOUTH PCN	LAMBERT MEDICAL CENTRE (B82042)	1	2	0

HAMBLETON NORTH PCN	MAYFORD HOUSE SURGERY (B82075)	1	5	0
RIPON & MASHAM PCN	NORTH HOUSE SURGERY (B82008)	1	1	0
FILEY AND SCARBOROUGH PCN	SCARBOROUGH MEDICAL GROUP (B82054)	1	0	1
FILEY AND SCARBOROUGH PCN	SCARBOROUGH MEDICAL GROUP (B82054)	1	1	0
RICHMONDSHIRE PCN	THE FRIARY SURGERY (B82072)	1	0	4
HEART OF HARROGATE PCN	THE MOSS PRACTICE (B82013)	1	8	0
MOWBRAY SQUARE PCN	THE SPA SURGERY (B82027)	1	1	0
WHITBY COAST & MOORS PCN	WHITBY GROUP PRACTICE (B82017)	1	8	0
<b>Spirolactone</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
YORK CITY CENTRE PCN	DALTON TERRACE SURGERY (B82021)	1	0	1
YORK EAST PCN	ELVINGTON MEDICAL PRACTICE (B82081)	1	0	5
WEST OUTER AND NORTH EAST YORK PCN	HAXBY GROUP PRACTICE (B82026)	2	3	1
SOUTH HAMBLETON & RYEDALE PCN	KIRKBYMOORSIDE SURGERY (B82077)	1	9	0
SOUTH HAMBLETON & RYEDALE PCN	MILLFIELD SURGERY (B82002)	1	0	10
YORK EAST PCN	MY HEALTH GROUP (B82080)	1	0	1
YORK EAST PCN	POCKLINGTON GROUP PRACTICE (B81036)	1	3	0
SELBY TOWN PCN	POSTERNGATE SURGERY (B82074)	1	0	9
PRIORY MEDICAL GROUP YORK PCN	PRIORY MEDICAL GROUP (B82005)	2	4	0
TADCASTER AND SELBY RURAL PCN	SHERBURN GROUP PRACTICE (B82031)	1	2	0
YORK MEDICAL GROUP PCN	YORK MEDICAL GROUP (B82083)	1	9	0
YORK MEDICAL GROUP PCN	YORK MEDICAL GROUP (B82083)	3	4	0
<b>Tacrolimus</b>				
<b>PCN</b>	<b>Practice</b>	<b>Count of Patients</b>	<b>Standard Strength Items</b>	<b>Non-standard Strength Items</b>
RIPON & MASHAM PCN	DR INGRAM & PTRS (B82036)	1	11	0

<b>No tacrolimus for York</b>				
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