

Position statement 18-01

Using Standardised Strengths of Unlicensed Liquid Medicines in Children

Take home summary

NPPG, and the Royal College of Paediatrics and Child Health (RCPCH), strongly recommend that when children require unlicensed liquid medications, they should receive the RCPCH and NPPG recommended strength, where one exists. There are currently 17 such recommended strengths detailed below, 16 of which are published in relevant drug monographs of the BNF for Children .

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

Standardised strengths which should be prescribed

Drug name	Strength
Azathioprine	50mg/5mL
Chloral Hydrate	1g/5mL
Clonazepam	2mg / 5mL
Clopidogrel	25mg/5mL*
Ethambutol	400mg/5mL
Hydrocortisone	5mg/5mL
Isoniazid	50mg / 5mL
Melatonin	1mg/mL
Midazolam	10mg/5mL
Omeprazole	20mg/5mL
Phenobarbitone (alcohol free)	50mg / 5mL
Pyrazinamide	500mg/5mL
Sertraline	50mg/5mL
Sodium chloride	5mmol/mL
Spirolactone	50mg/5mL
Tacrolimus	5mg / 5mL

* Clopidogrel strength is agreed, but as no monograph for this medication exists yet in the BNFC it is not yet published there

Further Information

Every year there is harm to patients caused by accidental under and overdosing of medicines in children solely due to the fact that the strength of their liquid medication changed and the person administering the medicine did not realise they needed to change the volume. Furthermore there is a strong desire to improve the quality and control the cost of this group of medications which still form a large proportion of the medicines supplied to children. It will be difficult to progress these quality improvements without first standardising the strength.

A study by Rawlence *et al* was undertaken to establish through evidence and Delphi review of experts the most suitable strength of each of the top 20 prescribed liquid special medications in children. When selecting initial strengths for review the following criteria were used:

1. Ideal : Dose for 1kg patient should not be less than 0.2mL and 50kg should not be more than 10mL
2. Satisfactory: Dose for 1kg patients should not be below 0.1mL and 50kg should not be above 20mL

Consensus of the standard strengths was found for 17 of the top 20 liquid special medications and these have been endorsed by the Medicines Committee at the RCPCH and published through the BNF for Children which both organisations publish with the Royal Pharmaceutical Society.

This position statement has been written to highlight that these standardised strengths exist and to encourage all prescribers to prescribe these strengths. We also encourage the use of these strengths to be supported through their inclusion in local guidance. This will help prevent errors in children whilst enabling further work to be undertaken to look at excipient suitability and cost control.

The recommended strengths can be found in the BNFC monographs for each of the drugs. In the paper copy this is in the prescribing and dispensing section. In the app this can be found by clicking the medicines tab of the relevant drug monograph.

References

Rawlence E *et al*. Is the provision of paediatric oral liquid medicines safe? *Arch Dis Child Educ Pract Ed*. 2018;103(6):310-3. doi: [10.1136/archdischild-2016-312132](https://doi.org/10.1136/archdischild-2016-312132). Epub 2018 Jan 31.

Disclaimer

'This publication is intended as a guide and may not always include all information relating to its subject matter. It should not be used by individuals or companies for commercial or marketing purposes.

Those using this information should interpret all information and advice in light of their own professional knowledge and all relevant pharmacy and healthcare literature and guidelines.

Nothing in this publication constitutes legal advice and cannot be relied upon as such.

Whilst care has been taken to ensure the accuracy of content NPPG excludes to the fullest extent permissible by law any liability whether in contract, tort or otherwise arising from reliance on any information or advice.'

Written by: NPPG Executive Committee

Version: 1

Published: December 2018

Review date: December 2021

Email: admin@nppg.org.uk

Website: www.nppg.org.uk