UNIVERSITY COLLEGE DUBLIN

An Coláiste Ollscoile Baile Átha Cliath

UCD SCHOOL OF NURSING, MIDWIFERY& HEALTH SYSTEMS

Scoil na hAltrachta, an Cnáimhseachais agus na gCoras Slainte

in partnership with

Mater Misericordiae University Hospital

St. Vincent's Healthcare Group

ST. VINCENT'S HEALTHCARE GROUP
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Medication Workbook for Year 1 BSc Children's and General Nursing Students: General Placement

Student Name:
Student Number:

Introduction

This booklet has been developed as a tool to assist you in gaining knowledge of some commonly used medications in your practice placements in Stage 1. In trimester 1 of Stage 1 you will receive an introductory lecture to medication management and professional practice. This workbook will enable you to link theory to practice in relation to medication management. Medication management is an important aspect of your National Competency Assessment Document (NCAD) Assessment and the Domains and performance indicators specific to this area are detailed in the table below:

Table 1: Domains and Standards that pertain to Medication Management

General Nursing Practice Placement

Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6
1.1	2.1	3.1[c]*	4.1	5.1	6.1
1.3	2.2	3.2	4.2	5.2	6.2
	2.3 [f]*				
	2.4				

*2.3 [f] Assists the Registered Nurse in the safe administration and management of medicines, in line with local policy

3.1[c] Is able to discuss clearly how medication calculations and management are carried out safely

As a stage 1 nursing student (Novice) you will be exposed to the principles and practices of medication management as an active observer/participant. The full theoretical component of medication management will be taught in year 2 (Advanced Beginner).

Following training in this practice placement you may be permitted to administer medication under direct supervision.

STAGE 1 SIGNATURE BANK

Each registered midwife/nurse who acts as a preceptor/co-preceptor for this student must sign this signature bank.

Preceptors/Co-preceptor Name (Print)	Signature	Preceptors/Co-preceptor Initials	Ward/Area

Learning Outcomes

During your Year 1 practice placements you should be able to:

- Summarise the Nursing and Midwifery Board of Ireland regulations in relation to medication management (Nursing and Midwifery Board of Ireland, 2020).
- Identify and explain the 10 'Rights' (R's) as per NMBI Guidance for Registered Nurses and Midwives on Medication Administration (NMBI, 2020).
- Describe the use of local policies and procedures for medication management (including controlled drugs).
- Demonstrate competent hand hygiene techniques (eg: hand washing; use of alcohol gel).
- Recognise how medications are prescribed (eg: on Medication Record, discharge prescription pad etc).
- Identify the steps involved in the administration of medication.
- Observe correct practice for checking right patient, right reason, right drug, right route, right time, right dose, right form, right form, right action, right documentation, right response double-checking of calculations and identification of patient/client and administration of medication (NMBI, 2020).
- Observe the calculation, preparation and double checking of medications including the identification of patients/clients and the administration of medications and identify rationale for this action.
- Recognise the different storage of medications.
- Identify a minimum of 3 different medications for each placement that are commonly used in the area and complete the workbook in relation to these medications.

Additional Learning Outcomes specific to this placement identified by the student/Preceptor:

This workbook is to be completed during each Year 1 placement.

The following explains the requirements for each section of the workbook that you are required to complete on each placement.

Medication Name	This refers to the approved (Generic) name of the medication, which is the name that must be used when the medication is prescribed
Brand/Trade Name	It is common to hear or see medications referred to by their brand name e.g., Panadol for paracetamol. It is important to be aware of the brand and generic name of medications
Medication Group	What group does the medication belong to? Is it an analgesic, anti-hypertensive, anti-pyretic, antibiotic?
Indication	Why is this medication used and for which condition and/or symptoms?
Dose	Doses may vary depending on weight, age, route used or the indications for use.
Route	How should the medication be administered e.g. orally, rectally, intravenously, inhalation, intramuscularly, subcutaneously
Frequency	How often should this medication be administered? What is meant by a 'regular prescription' and a prescription that is 'PRN'? Where possible include the maximum dose in a 24-hour period or highlight the differences in frequency depending on route used.
Peak Action/Duration of Action	For example, if analgesia has been administered, how long will it take to work and how long will it last in the patients/client's system?
Contraindications/Cautions	Important to identify contraindications
Side-Effects	When you know the side-effects, you can identify the reason quickly and prevent or manage the side-effect in an effective manner
Observed administration of medication	Indicate if you have been involved in observing the administration of the stated medication
Participate under direct supervision in preparation, calculation, administration and documentation of medication	Indicate if you have participated under direct supervision in the preparation, calculation, administration and documentation of medication

The nurse who is administering the medicines must adhere to the ten rights of medication administration when administering medications to the patients in their practice placements (NMBI, 2020, pp-16). These are:

1. **Right Patient:** Be certain of the identity of the patient to whom the medicine is being administered by verifying the identification wristband, photograph or name and date of birth on the medicine chart.
2. **Right Reason:** Understand the intended purpose of the medicines to be administered.
3. **Right Drug:** Confirm that the name of the dispensed medicine to be administered corresponds with the generic or brand name of the prescribed medicine, and they must only administer a viable medicinal product – that is, properly packaged and within its expiry date. The nurse must also check, both by asking the patient and inspecting the allergy status box on the medicines chart, whether the patient has a known and recorded allergy to the prescribed drug or no known allergies. The allergy box must be completed.
4. **Right Route:** Administer the medicine via the prescribed anatomical route and site.
5. **Right Time:** Administer the medicine at the prescribed time and prescribed intervals.
6. **Right Dose:** Confirm, through arithmetical calculation that the dose of the medicine being administered concurs exactly with the dose prescribed. Where the local Policies, Procedures, Protocols and Guidelines (PPPGs) identify this process for high risk medicines, the dose must be independently verified.
7. **Right Form:** Confirm that the form of medicine that has been dispensed matches with the specified route of administration.
8. **Right Action:** Ensure the medicine is prescribed for the appropriate reason and state to the patient the action of the medicine and why it is prescribed.
9. **Right Documentation:** Sign, date and retain all documentation recording the administration of each medicine in the medicine's administration chart (or other document directing the administration of a medicine). The chart must only be signed to record a medicine has been administered once the medicine administration has been witnessed.
10. **Right Response:** Observe the patient for adverse effects and assess the patient to determine that the desired effect of the medicines has been achieved.

*The information you require can be obtained from a number of sources including: www.medicines.ie which contains accurate, up to date, regulator approved information on medicines available in Ireland (Medicines.ie, 2019), The Irish Medicines Formulary, British National Formulary, Children's Health Ireland Hospital Formulary (Clinibee), the hospital/community pharmacist, doctors, nursing/midwifery colleagues, articles, local policies and guidelines and NMBI guidelines

Always refer to the local Medication Policy for Medication Administration and Management

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The Ten Rights of Medication Management

https://www.nmbi.ie/NMBI/media/NMBI/NMBI-Medication-Administration-2020.pdf?ext=.pdf (NMBI, 2020)

Stage 1: General Practice Placement

Medication Generic/Brand/ Trade Name Choose medication related to specific clinical area	**Medication Group & Indications**	**Dose/ Route**	**Frequency**	**Peak Action/ duration of action** (If available)	**Contraindications/ Cautions / Nursing Considerations**	**Side- effects**	**Observed administration of medication**
1.							
2.							

Medication **Generic/Brand/Trade Name** Choose medication related to specific clinical area	**Medication Group & Indications**	**Dose/ Route**	**Frequency**	**Peak Action/ duration of action** (If available)	**Contraindications/ Cautions / Nursing Considerations**	**Side- effects**	**Observed administration of medication**
3.							

Student Signature: _____ **Date:** _____

Preceptor Signature: _____ **Date:** _____

Stage 1: General Practice Placement Additional Medications

Medication Generic/Brand/ Trade Name Choose medication related to specific clinical area	**Medication Group & Indications**	**Dose/ Route**	**Frequency**	**Peak Action/ duration of action** (If available)	**Contraindications/ Cautions / Nursing Considerations**	**Side- effects**	**Observed administration of medication**
1.							
2.							

Medication Generic/Brand/Trade Name Choose medication related to specific clinical area	**Medication Group & Indications**	**Dose/ Route**	**Frequency**	**Peak Action/ duration of action** (If available)	**Contraindications/ Cautions / Nursing Considerations**	**Side- effects**	**Observed administration of medication**
3.							

Student Signature: _____ **Date:** _____

Preceptor Signature: _____ **Date:** _____

Suggested reading:

Berman, A. Synder, S. & Frandsen, G. (2021) *Kozier & Erb's fundamentals of Nursing: Concepts, Process and Practice*. 11th Ed., New Jersey: Pearson Prentice Hall.

Boyd, C. (2022), *Calculation skills for nurses,* 2nd Ed, Wiley Blackwell, Hoboken, NJ, USA.

Blair, K. (2015) *Medicines Management in Children's Nursing*, 2nd edn., London: SAGE Publication Ltd

Hayes, C., Jackson, D., Davidson, P.M. & Power, T. (2015), "Medication errors in hospitals: a literature review of disruptions to nursing practice during medication administration", *Journal of clinical nursing,* 24, 21-22, pp. 3063-3076.

Health Information and Quality Authority (2015) *Medicines Management Guidance*. Dublin: Health Information and Quality Authority

Health Products Regulatory Authority (2022) *Safety Information*. Available online: http://www.hpra.ie/homepage/medicines/safety- information

Lapham, R. (2021), *Drug calculations for nurses: a step-by-step approach,* 5th Ed, Routledge, Taylor & Francis Group, London.

Latimer, S., Hewitt, J., Stanbrough, R. & McAndrew, R. (2017), "Reducing medication errors: Teaching strategies that increase nursing students' awareness of medication errors and their prevention", *Nurse education today,* 52, pp. 7-9.

Lister, S.E., Hofland, J., Grafton, H., Wilson, C. & Royal Marsden NHS Foundation Trust (2021), *The Royal Marsden manual of clinical nursing procedures,* 10th Ed, Wiley Blackwell, Chichester, West Sussex, UK.

Nursing and Midwifery Board of Ireland (2015) *Scope of Nursing and Midwifery Practice Framework*. Dublin: NMBI.

Nursing and Midwifery Board of Ireland (2020) Guidance for Registered Nurses and Midwives on Medication Administration. Available at: https://www.nmbi.ie/Standards-Guidance/Medicines-Management

Starkings, S & Krause, L. (2021) *Passing Calculations Tests in Nursing*, 5th edn., London: SAGE Publication Ltd.

Tiziani, A. (2016) *Clinical Cases: Drug Calculations Case Studies*, 1st edn., Elsevier, Australia.

Useful websites
Nursing and Midwifery Board of Ireland (2020) Guidance for Registered Nurses and Midwives on Medication Administration. Available at: https://www.nmbi.ie/Standards-Guidance/Medicines-Management Online BNF. Available at: medicinescomplete.com Dosagehelp.com (2018) Available at: http://www.dosagehelp.com/ Queens University Belfast (2023) Numeracy Skills for Drug Calculations. Available at: https://www.qub.ac.uk/elearning/public/NumeracySkillsforDrugCalculations/ Drug calculations quiz page (2018) Available at: http://www.testandcalc.com/quiz/index.asp World Health Organizations (2019) 5 Moments for medication. Available at: https://apps.who.int/iris/rest/bitstreams/1210432/retrieve

University College Dublin
School of Nursing, Midwifery & Health Systems

Dublin City University
School of Nursing, Psychotherapy & Community Health

Trinity College Dublin
School of Nursing & Midwifery

in partnership with

Children's Health Ireland
at Crumlin, Temple St, Tallaght and Connolly

Integrated Medication Workbook for Year 1 BSc Children's and General Nursing Students: Children's Placement

Student Name:
Student Number:

Signature Bank

Each registered nurse who acts as a preceptor/co-preceptor for this student or who works with the student to help complete this workbook must sign this bank

Preceptors/Co-preceptor Name (Print)	Signature	Preceptors/Co-preceptor Initials	Ward/Area

Introduction

This workbook has been developed to assist you with medication management, drug calculations and to gain knowledge of commonly used medications in children's nursing, during your **first children's nursing clinical placement**. This is a **self-directed learning workbook** meaning that it is your responsibility to complete. If you require help and /or advice to complete this workbook during clinical placement you should ask your preceptor / co-preceptor or any registered nurse who you work with while on your first children's nursing placement. You are encouraged to **present your workbook to your preceptor** at your intermediate and / or final interview. There are 5 sections to complete in this workbook.

Section 1: Before you begin

In this section you are required to download two applications that are used across Children's Health Ireland (CHI) for medication management practices. You are also required to revise unit conversions, metric conversions and to complete a conversion exercise.

Section 2: Commonly used medications

In this section you are required to identify 3 commonly used medications that are specific to your 1st children's nursing clinical placement.

Section 3: Calculating drug dosages

In this section you are required to work through the drug calculations provided, remember to formulate your answers to the questions, without using a calculator (using mental arithmetic). When you have this done you should check your answers using a calculator. You can ask your preceptor / co-preceptor to cross check your answers and / or you can cross check your answers with your student colleagues.

Section 4: Patient case study

In this section you are required to create a patient case study using the reflective framework provided. Remember to fill in each section.

Section 5: '10 rights of medication administration' exercise

In this section you are required to read a scenario and using the grid provided, write an answer that corresponds to each of the 10 rights.

Note: It is important that you adhere to Clinibee and CHI local policy.

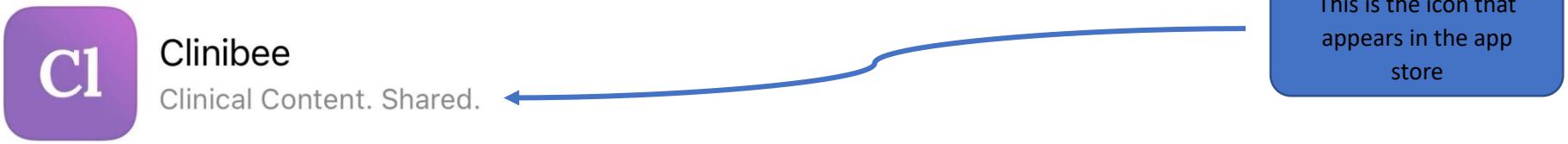
Section 1: Before you begin

Download **Clinibee** and register to use the app

Revise unit conversions, see the table on the next page

Revise metric conversions, see the table on the next page

Revise the 10 rights of medication management, see Appendix 1



Revision: unit conversions

1 Kilogram (kg)	=	1000 grams (g)
1 Gram (g)	=	1000 milligrams (mcg)
1 Milligram (mg)	=	1000 nanograms (µg)
1 Microgram (mcg)	=	1000 nanograms (ng)

Revision: metric conversions

Remember the rule: converting a *larger* unit *to* a *smaller* unit *multiply* by 1000	**Remember the rule: converting a *smaller* unit *to* a *larger* unit *divide* by 1000**
Kilogram (kg) to gram (g) x 1000	Gram (g) to kilogram (kg) ÷ 1000
Gram (g) to milligram (mg) x 1000	Milligram (mg) to gram (g) ÷ 1000
Milligram (mg) to micrograms (mcg) x 1000	Microgram (mcg) to milligrams (mg) ÷ 1000
Microgram (mcg) to nanogram (ng) x 1000	Nanogram (ng) to microgram (mcg) ÷ 1000
Litre (L) to millilitre (mL) x 1000	Millilitre (ml) to litre (L) ÷ 1000

Now let's practice:

				Show how you got your answer
1	0.06 g	=	mg	In this exercise you need to convert from a larger unit (g) to a smaller unit (mg) therefore you multiply by 1000. The decimal point jumps three places to the right. Answer: 0.06 g X 1000 = 60 mg 0.06 g = **0 . 0 6 0** becomes 60 mg 

2	300 micrograms	=	mg	
3	0.85 mg	=	micrograms	
4	0.125 mg	=	micrograms	
5	180 micrograms	=	mg	
6	60 micrograms	=	nanograms	
7	200 nanograms	=	micrograms	
Signature of student: **Date:**				**Signature of registered nurse:** **Date:**

Section 2: The following headings explain the requirements for each section of the workbook

Medication Name:	This refers to the approved (generic) name of the medication, which is the name that must be used when the medication is prescribed.
Brand/Trade Name:	It is common to hear or see medications referred to by their brand name e.g., Calpol, Paralink or Panadol for paracetamol.
Medication Group:	What group does the medication belong to? Is it an analgesic, diuretic, anti-pyretic?
Indications:	Why is this medication used, and for which condition and / or symptoms?
Dose:	In children's nursing care doses vary depending on weight, age, route used or the indications for use.
Frequency:	How often should the medication be given? Where possible include the maximum dose in a 24-hour period or highlight the differences in frequency depending on route used.
Peak Action / Duration of action:	For example, if analgesia has been given, how long will it take to work and how long will it last in the infant's, child's or young person's system?
Contraindications / Cautions / Nursing considerations:	These are extremely important to identify as they could cause harm to the infant, child or young person receiving the medication.
Side- effects:	When you know the side-effects, you can identify the reason quickly and prevent or manage the side-effect in an effective manner.
Observe the administration of medication:	Observe two registered nurses carrying out the process of medication administration to an infant, child or young person from beginning to end.
Observe calculation of medication:	Observe the correct practice for checking doses, calculation and double-checking of calculation of prescribed dose.
The information can be obtained from several sources including:	Clinibee, the hospital pharmacist, doctors, nursing colleagues, articles, local policies, and guidelines, NMBI guidelines and lecture notes on medication administration and pharmacology notes.

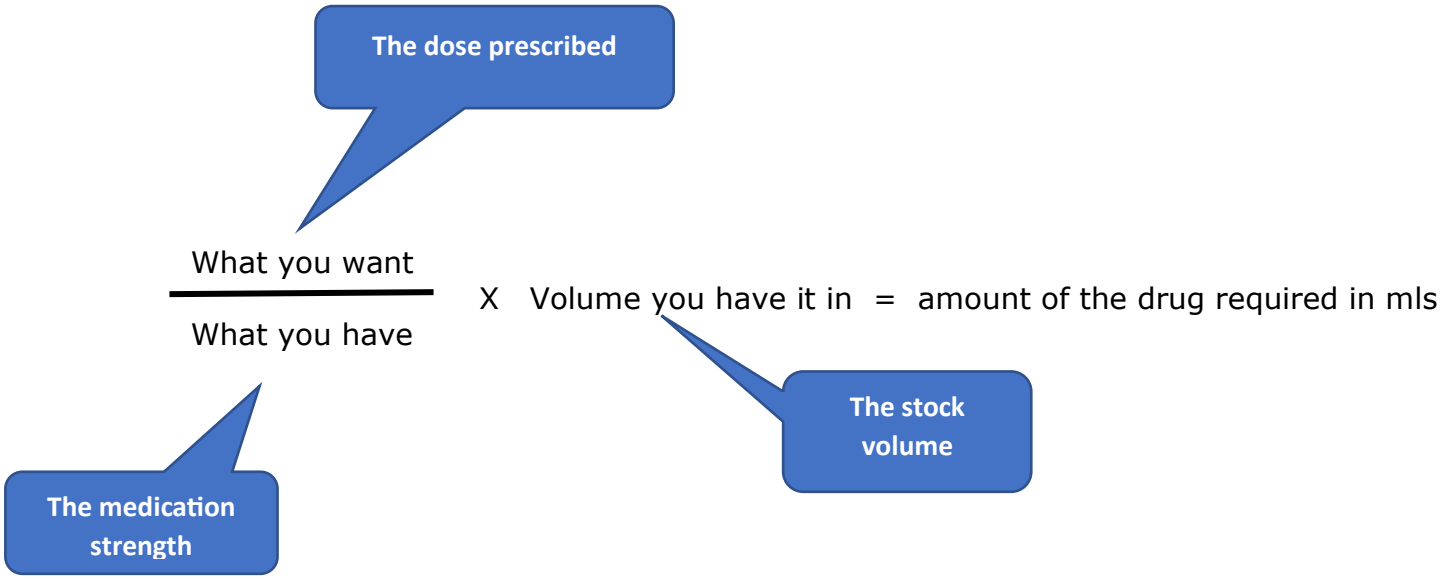
Medication 1			
Medication Name:	Brand / Trade name:	Medication group:	Child's weight (kgs):
Dose prescribed:	Frequency:	Indications:	
Route prescribed:	Peak action / duration of action:	Side-effects:	
Contraindications / cautions / nursing considerations:		Observe in the calculation of the medication:	Observe administration of the medication to the infant, child, or young person:
Signature of student: **Date:**		**Signature of registered nurse:** **Date:**	

Medication 2			
Medication Name:	Brand / Trade name:	Medication group:	Child's weight (kgs):
Dose prescribed:	Frequency:	Indications:	
Route prescribed:	Peak action / duration of action:	Side-effects:	
Contraindications / cautions / nursing considerations:		Observe in the calculation of the medication:	Observe administration of the medication to the infant, child, or young person:
Signature of student: **Date:**		**Signature of registered nurse:** **Date:**	

Medication 3			
Medication Name:	Brand / Trade name:	Medication group:	Child's weight (kgs):
Dose prescribed:	Frequency:	Indications:	
Route prescribed:	Peak action / duration of action:	Side-effects:	
Contraindications / cautions / nursing considerations:		Observe in the calculation of the medication:	Observe administration of the medication to the infant, child, or young person:
Signature of student: **Date:**		**Signature of registered nurse:** **Date:**	

Section 3: Drug calculations using the Clinibee app

Drug Calculation Formula



Let's look at an example:

Bobby is 5 years old and weighs 18.8 kgs. He has been prescribed paracetamol PO to treat his high temperature.

Question 1: How much paracetamol do you think should be prescribed for Bobby?

Using the CHI Paediatric Formulary / Clinibee app check how many mg / kg of PO paracetamol is suitable for Bobby who is 5 years old and has a high temperature.

Answer 1: Bobby can receive 15mg / kg therefore the dose prescribed for him should be his weight in kg (18.8 kgs) x 15 = 282 mg of paracetamol

Question 2: How often do you think Bobby should receive this prescribed dose?

Answer 2: Bobby can receive the dose of 15mg / kg (max. 1g) PO every 4 - 6 hours.

Question 3: Look at the bottle of paracetamol on the left and using the **drug calculation formula** calculate the dose that Bobby should receive.

Answer 3:

What you want

$$\frac{282\text{ mg}}{120\text{mg}} \times 5\text{ml} = 11.7\text{ mls (from this bottle)}$$

What you have

Volume you have it in

Question 4: How do you think Bobby's prescribed dose should be measured?

Look at the below pictures: should Bobby's dose be measured by using an (A) oral syringe, (B) a medicine spoon or (C) a medicine cup? Circle a letter to indicate your answer.

A	B	C
		

Scenario 1

Tom is 4 years old and weighs 16.8 kgs. He has a fever and requires treatment with an oral anti-pyrexial medication. Paracetamol dosage is 15mg/kg.

Questions:

How much paracetamol should be prescribed for Tom?

Using the bottle of paracetamol in the example on the previous page, how much paracetamol should Tom receive for his dose?

Calculate your answer:

Signature of student: **Signature of registered nurse:** **Date:**

Scenario 2

Chloe is 3 weeks old and weighs 3.7kgs. She requires flucloxacillin orally to treat her pneumonia. The dose is 25mg/kg.

Questions:

How much flucloxacillin should be prescribed for Chloe?
Is this dose correct for Chloe?
How many mls of flucloxacillin medication should Chloe receive for her dose?

Calculate your answer:

Signature of student: **Signature of registered nurse:** **Date:**

Scenario 3

Poppy is 4 years old and weighs 16kgs. Ibuprofen 120mg PO has been prescribed for Poppy.

Questions:

How much ibuprofen has been prescribed for Poppy, per kilo of body weight?
Has the correct dose of the medication been prescribed for Poppy?
How often can Poppy receive this dose?

Calculate your answer:

Signature of student: **Signature of registered nurse:** **Date:**

Scenario 4

Emma is 6 years old and weighs 21.4kgs. She is prescribed 321mg of paracetamol orally.

Questions:

How much paracetamol is prescribed for Emma per kilo of body weight?
Which paracetamol preparation would be most suitable for Emma?

Calculate your answer:

Signature of student: **Signature of registered nurse:** **Date:**

Scenario 5

Hugo is 15 weeks old, weighs 6.9kgs and requires Trimethoprim orally for treatment of a urinary tract infection (UTI).

Questions:

How much Trimethoprim should be prescribed for Hugo?
Using the Clinibee app calculate how many mls of Trimethoprim oral suspension Hugo would need to receive?

Calculate your answer:

Signature of student: **Signature of registered nurse:** **Date:**

Section 4: Patient case study

Think of an infant, child, or young person you cared for recently and create a patient case study using the below framework. Remember to maintain patient confidentiality by not using their real name or identifiable markers.

<table>
<tr><td>Male/Female:</td><td colspan="3">Age:</td></tr>
<tr><td>Allergies:</td><td colspan="2">Medication(s) on admission:</td><td>Weight (kgs):</td></tr>
<tr><td colspan="2">Past Medical/Surgical History:</td><td colspan="2">Present Diagnosis:</td></tr>
<tr><td>Medications used during this admission:</td><td>Action of the Medication(s):</td><td colspan="2">Side Effects/Nursing Considerations:</td></tr>
<tr><td colspan="4">Any other relevant information (special requirements recommended by pharmacist):</td></tr>
<tr><td colspan="4">Any other observations (adverse reactions):</td></tr>
<tr><td colspan="2">Signature of student:</td><td>Signature of registered nurse:</td><td>Date:</td></tr>
</table>

Section 5: The '10 Rights of Medication Management' exercise

Consider this scenario: Today is Monday the 1st of March 2023. Yesterday, on Wednesday the 1st of March 2023 Darragh Ryan (DOB: 14/02/2021) was admitted to the ward electively (MRN 122334) accompanied by his parents. His weight on admission was 12 kgs. This morning Darragh went to theatre for a hernia repair which was carried out successfully. Since returning to the ward post-operatively Darragh's observations have been stable, he has had some water to drink, and his mother Debbie has been at his bedside continuously. Debbie approaches you to ask if he can have some pain relief for his soreness. You check Darragh's drug Kardex and see that he is prescribed 180 mg of paracetamol PO 4 – 6 hourly.

Using the grid below, consider the 10 rights of medication management and write an answer for each 'right'.

The 10 rights of medication administration	Considerations	Your answer
Right Patient	How can I be sure that this is Darragh Ryan?	
Right Reason	Why is Darragh receiving this medicine? What is its intended purpose?	
Right Medicine	How do I know that I have the right medicine?	
Right Route	What route is prescribed and is this the correct route?	
Right Time	When can Darragh receive this medicine?	

Right Dose	Is the dose prescribed for Darragh suitable for his age and weight?	
Right Form	Is the form of medicine available on the ward suitable for the route of administration?	
Right Action	Has this medicine been prescribed for the right reason? Does Darragh's mother Debbie understand why this medicine has been prescribed for Darragh and what can she expect after Darragh receives the medicine?	
Right Documentation	When and how should the necessary documentation be completed?	
Right Response	What do I need to do after Darragh has received his prescribed dose?	
Signature of student:	**Signature of registered nurse:**	**Date:**

Feedback Log from Registered Nurse / Preceptor

Section Feedback	Date and signature of registered nurse:
Section 1:	
Section 2:	
Section 3:	
Section 4:	
Section 5:	

Appendix 1

UCD School of Nursing, Midwifery and Health Systems

This workbook has been developed by children's nursing academics in TCD, UCD and DCU and the CPC teams at CHI Temple Street, CHI Crumlin, CHI Tallaght and CHI Connolly (August 2022).