

 safeMedicate

# PROSPECTUS

## 2023

**Be competent, be safe**

*There is no room for error with drug calculations.  
Develop and assess your skills with the world's  
leading resource for healthcare students and  
practitioners.*

# Introduction

The only way  
to do great work  
is to love  
what you do.

The safeMedicate® suite of medication dosage calculation problem-solving environments was launched in 2004 by UK based company Authentic World Ltd. Our mission is to improve patient safety by reducing medication error through high quality education and

innovative software solutions. Our safeMedicate® product and services portfolio is founded upon a series of innovative educational software applications derived from over 30 years of PhD and post-doctorate translational research. All products are web-based and capable of standalone use or of seamless integration with existing learning management systems.

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### OUR COMPANY

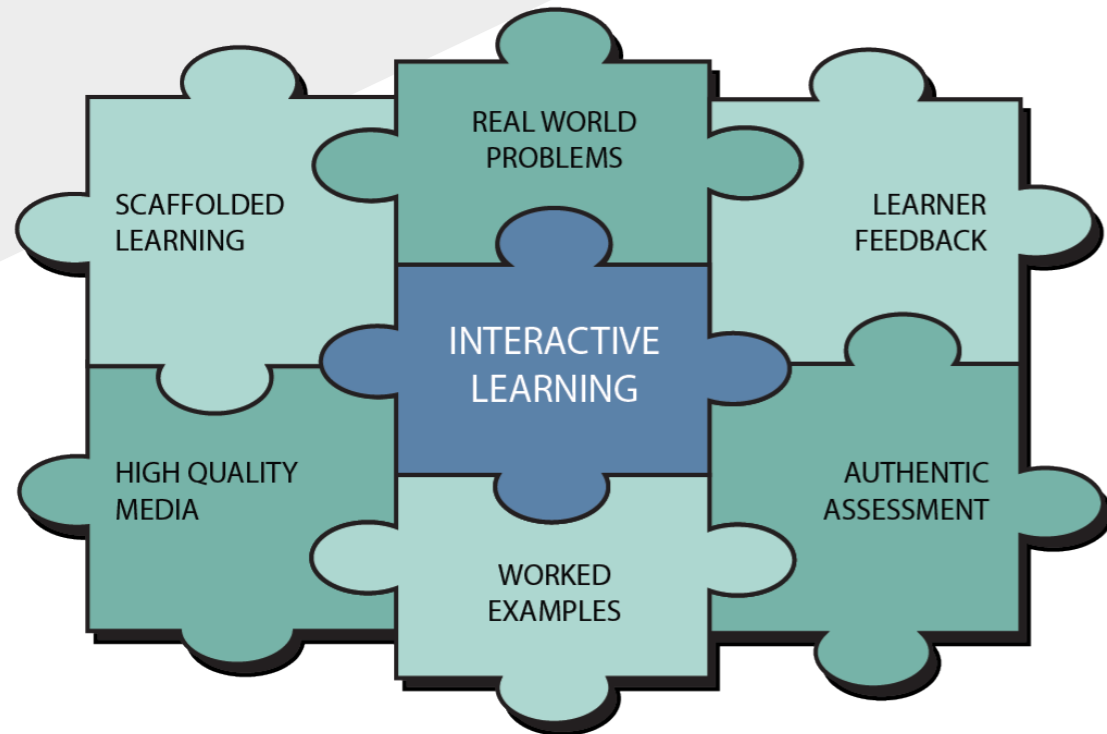
In 2022, safeMedicate® is used by higher education institutions and healthcare systems in 11 countries across five continents and is informing the competence development and assessment of over a quarter of million healthcare students and practitioners across the globe.



# Our Products

safeMedicate® learning environments aim to guide users through an experiential learning process that effectively bridges the gap between theory and practice.

Based upon constructivist theories of learning, this unique approach provides a platform for learning that is proven to be highly effective in assisting the development of key problem solving skills.

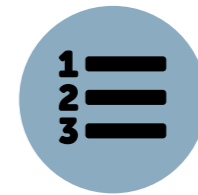


## DISTINGUISHING FEATURES



### EXPOSURE TO REAL WORLD PROBLEMS

Presentation of authentic dosage calculation problems as they exist in real world environments



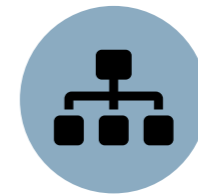
### UNIQUE COMPETENCE MODEL

A 3-phase model that sits at the heart of dosage calculation competence development and assessment



### HIGH QUALITY MEDIA

Authentic visual representations of what learners will see and use in practice



### SCAFFOLDED LEARNING

Use of innovative techniques that support the systematic construction of competence in dosage calculation



### WORKED EXAMPLES

Step-by-step walk-throughs that illustrate expert dosage calculation problem solving techniques that support a range of learning styles



### AUTHENTIC ASSESSMENT

Diagnostic assessment of learner dosage calculation competence in a 'real world' context



### INTERACTIVE LEARNING

Use of immersive techniques that encourage active learner engagement with authentic features of clinical dosage calculation problems



### LEARNER FEEDBACK

Evaluation of learner performance, measured against expert problem solving models that facilitates rapid diagnosis of competence and identification & correction of errors.

# Developing Competence Through Research-Based Evidence

## SAFETY IN NUMBERS



Clinical drug dosage calculation problems need to be learned and assessed under conditions where the mathematics in the real world is messy and complex, highly embedded and often hidden or invisible (1Tout, 2014). safeMedicate virtual environments are designed to immerse the learner and practitioner at the interface of the authentic and complex world of drug dosage calculation problem-solving and the abstract world of healthcare mathematics. The safeMedicate authentic competence model and suite of programs, is underpinned by a 28-year programme of translational research, reported in 2013 by Elsevier in an eight-paper Safety in Numbers virtual special issue of Nurse Education in Practice. The series is available online [here](#). To date over 3,000,000 safeMedicate authentic assessments have been undertaken across the globe and are contributing to advancing patient safety via evidenced based education, error diagnosis and competence development.

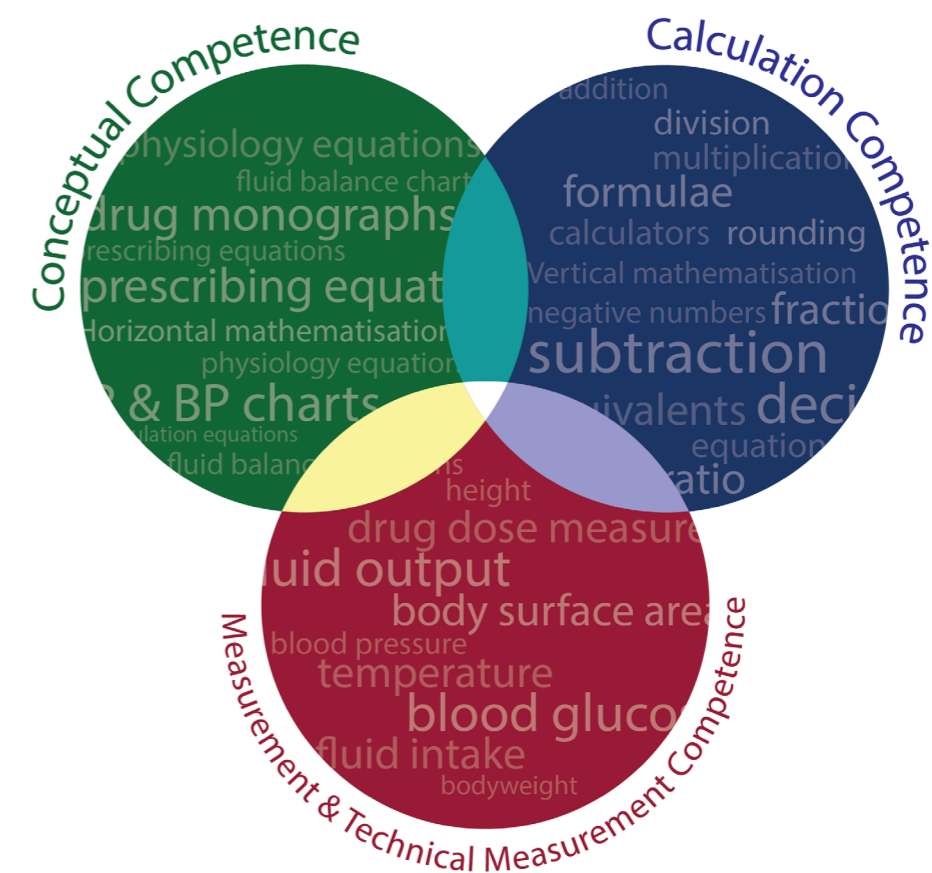
## THE SAFEMEDICATE COMPETENCE MODEL

Every healthcare professional with responsibility for medication administration must develop, demonstrate and maintain competence within this domain of clinical practice.

Competence in medication dosage calculation problem solving is dependent upon three interrelated sub-elements:

1. Conceptual competence – understanding the problem in context.
2. Calculation competence – accurately calculating dosage and rate numerical values and measurement units.
3. Technical measurement competence – transferring the numerical values to a medication measurement vehicle e.g. syringe or IV pump.

Our software provides a unique and innovative environment for developing and assessing cognitive competence (knowledge) in an authentic virtual clinical context. It also sensitizes and prepares the user for the general principles underpinning the functional competence (know-how and skills) requirements of dosage calculation problem solving in clinical practice.





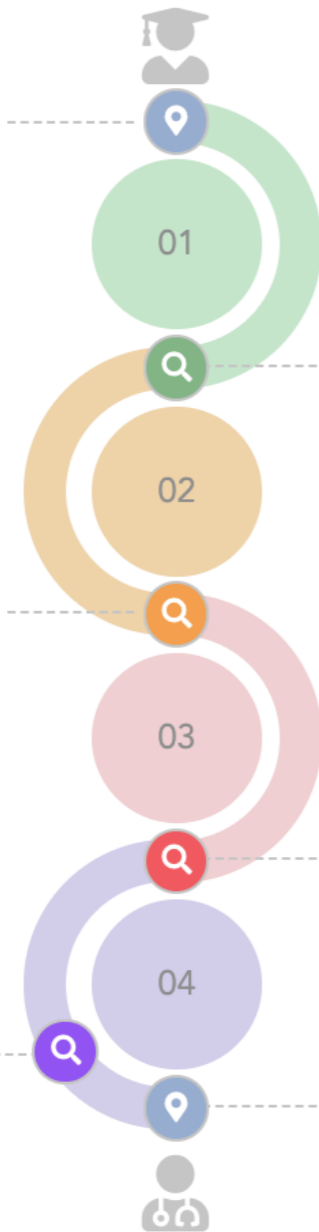
Typical Student Pathway

fns healthcare numeracy assessment hna

**Formative Healthcare Numeracy Assessment**

Typically undertaken:

- On entry to pre-registration programmes, to provide a baseline fingerprint of capability in 20 core mathematics skills, and
- Throughout the pre-registration programme, to evaluate developing competence in applied healthcare numeracy skills.



fns essential skills es

Competence development in tablet and capsule, oral liquid medicine, injection and IV infusions of crystalloid solutions and blood and blood product dose calculation skills.

fns bodyweight & body surface area calculations as

Competence development in bodyweight and body surface area (BSA) based dose calculations.

fns injectable medicines therapy as

Competence development in slow IV injection, intermittent infusion and continuous infusion medicine dose calculations and problem solving.

fns fundamental prescribing & practical dosing calculations pdc

Competence development in preparation for accurately completing and routinely checking calculations relevant to prescribing and practical dosing.

fns healthcare numeracy assessment hna

**Summative Healthcare Numeracy Assessment**

Undertaken by the point of registration or licensure, to provide a healthcare numeracy competence fingerprint in 20 core healthcare numeracy skills underpinning and informing nursing science and safe professional nursing practice.

**Typical Assessment Points**

Authentic Diagnostic Assessment (ADA) used to evaluate conceptual, calculation and measurement/technical measurement competence development and the diagnosis and rectification of errors.

Authentic Assessment (AA) used to evaluate dosage calculation problem-solving competence under virtual simulated clinical conditions

Typical Practitioner Pathway



fns essential skills es

Competence development in tablet and capsule, oral liquid medicine, injection and IV infusions of crystalloid solutions and blood and blood product dose calculation skills.

fns bodyweight & body surface area calculations as

Competence development in bodyweight and body surface area (BSA) based dose calculations.

fns injectable medicines therapy as

Competence development in slow IV injection, intermittent infusion and continuous infusion medicine dose calculations and problem solving.

fns fundamental prescribing & practical dosing calculations pdc

Competence development in preparation for accurately completing and routinely checking calculations relevant to prescribing and practical dosing.

**Typical Assessment Points**

- Authentic Assessment (AA) used to evaluate dosage calculation problem-solving competence under virtual simulated clinical conditions.
- Authentic Diagnostic Assessment (ADA) used to evaluate conceptual, calculation and measurement/technical measurement competence development and the diagnosis and rectification of errors.
- Module learning zones used when support is required to advance competence or to rectify errors diagnosed during ADA and AA assessments.

# Our Team



## UK TEAM



**Norman Woolley**  
**Founding Director & CEO**

Norman is a nursing and computing masters graduate. He has 40 years experience in the healthcare sector and 25 years software design and development experience in both academic and commercial environments.



**Keith Weeks**  
**Founding Director & CRDO**

Keith is a Professor of Healthcare Numeracy and Education, who has circa 40 years of experience in the healthcare sector. His PhD in authentic virtual learning environment development underpins the design of the international safeMedicate suite of programs.



**Matt Brown**  
**Associate Director -  
Technical Systems Development**

Matt is a Graphic Design graduate who joined Authentic World Ltd in 2004. He works closely with the UK and US teams to develop new, innovative solutions to enhance the scope and effectiveness of safeMedicate.



**Andrew Smith**  
**Developer &  
Special Projects Manager**

Andrew is a computing graduate who holds a BSc (Hons) in Computer Science from the University of South Wales. He joined Authentic World Ltd in 2012 as a member of the software development team.



**Alex Weeks**  
**Associate Director - Mathematical  
Modelling & Translational Research**

Alex is a mathematics graduate, that leads on the research, design and development of the mathematical models that underpin the design of the International Healthcare Numeracy and safeMedicate Future Nurse Suite of programs.



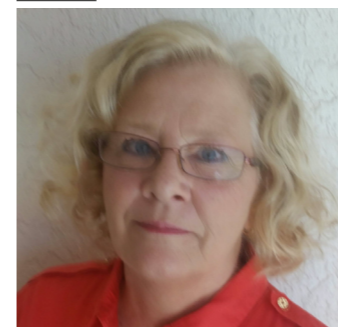
**Kirsty Weeks**  
**Associate Director of Marketing**

Kirsty is a marketing graduate who holds a BA (Hons) in Promotion and Marketing. Her passion for promotion and marketing covers all aspects such as photography, styling, film, creative direction, magazine design, and social media. Kirsty joined Authentic World Ltd in 2017 as a member of the marketing team.



**Samantha Woolley**  
**Customer Success Manager**

Sam is a science graduate who holds a BSc (Hons) in Forensic Biology from the University of South Wales. With six years experience in customer service and two years working in a toxicology laboratory, Sam joined Authentic World Ltd in 2020 as a member of the Customer Success team.



**Jody Hamm**  
**President and CEO**

Jody holds an MBA and has worked with the program since 2010. Beginning in 2015, when Jody formed the simMedicate distributorship, she has been traveling across the continent promoting safeMedicate.



**Larry Hamm**  
**PhD Marketing Executive**

Larry is the former Director of Education and Training for Medical Education Technologies, Inc., where, in 2008, he first became involved with safeMedicate. He currently handles Administrative and Marketing responsibilities associated with the North American distributorship.



**Doniele Russell**  
**Vice-President**

Doniele Russell has a BS in Geography and a BS in Environmental Planning from Slippery Rock University. After 20 years of community service as a Deputy Planner, she joined the safeMedicate team in 2020.

## INTERNATIONAL TEAMS

safeMedicate is distributed exclusively in North America and Canada by simMedicate, Inc.

# Global Highlights

safeMedicate is the market leading resource for healthcare students and practitioners worldwide.



### ASSESSMENTS TAKEN

**+5.3 MIL**

Over 5.3 million assessments have been taken.



### USERS

**+370,000**

Over 370,000 users worldwide are using the safeMedicate suite of programs.



### COUNTRIES

safeMedicate is being used across the globe in 11 countries.



### CONTINENTS

safeMedicate is being used across 5 continents.





# Meeting The Future Nurse Standards

WE'VE GOT IT COVERED!

Read what we're doing to support education providers in the UK in meeting the new NMC Future Nurse standards in the areas of health numeracy and drug dosage and prescribing calculations.



From 28 January 2019 all approvals for education programmes will be made against these new standards. Amongst other things, the standards have placed new responsibilities on education providers and practice learning partners in the area of health numeracy. In particular, they have introduced the requirement for a 'health numeracy assessment' which is broader and separate to an assessment of drug dosage calculation competence. Additionally, the NMC now have higher expectations for best practice, evidence-based medicines administration and the requirement for newly registered nurses to be equipped to progress to a prescribing qualification following registration.

Below we illustrate our new safeMedicate UK RN 3-Year Future Nurse Pre-registration Curriculum Model

safeMedicate Be competent Be safe Be part of the solution		UK RN 3-year Future Nurse Pre-Registration Curriculum Model					
Focus	Year 1	Year 2			Year 3		
				INJECTABLE MEDICINES MODULE	RETRIEVAL	RETRIEVAL	
			BODYWEIGHT & BODY SURFACE AREA MODULE	RETRIEVAL			
	ESSENTIAL SKILLS MODULE	RETRIEVAL					
	HEALTHCARE NUMERACY ASSESSMENT	HEALTHCARE NUMERACY ASSESSMENT				HEALTHCARE NUMERACY ASSESSMENT	
HEALTHCARE NUMERACY ASSESSMENT POINTS	AT ENTRY	CONTINUOUS FORMATIVE ASSESSMENT			FINAL SUMMATIVE ASSESSMENT		
DRUG DOSE CALCULATION ASSESSMENT POINTS		ADA & AA	ADA & AA	ADA & AA	ADA & AA	ADA & AA	ADA & AA
INCREASING LEVEL OF COMPETENCE COMPLEXITY		←————→					
FIELD OPTIONS		←———— CHILD, ADULT, MENTAL HEALTH, LEARNING DISABILITY, MIDWIFERY & NEONATES ———→					

Below we illustrate our new safeMedicate UK Nursing Associate 2-Year Future Nurse Pre-registration Curriculum Model

safeMedicate Be competent Be safe Be part of the solution		UK Nursing Associate 2-year pre-registration curriculum model			
Focus	Year 1	Year 2			
	ESSENTIAL SKILLS MODULE TABLETS/CAPSULES ORAL LIQUID MEDICINES SUBCUTANEOUS INJECTIONS INTRADERMAL INJECTIONS			RETRIEVAL	RETRIEVAL
	HEALTHCARE NUMERACY ASSESSMENT	HEALTHCARE NUMERACY ASSESSMENT			
HEALTH NUMERACY ASSESSMENT POINTS	AT ENTRY	CONTINUOUS FORMATIVE ASSESSMENT		FINAL SUMMATIVE ASSESSMENT	
DRUG DOSE CALCULATION ASSESSMENT POINTS		ADA & AA	ADA & AA	ADA & AA	ADA & AA
INCREASING LEVEL OF COMPETENCE COMPLEXITY		←————→			
DISCIPLINE OF NURSING OPTIONS		←———— CHILD, ADULT, MENTAL HEALTH, LEARNING DISABILITY, MIDWIFERY & NEONATES ———→			

# Our Modules

safeMedicate® learning and assessment environments aim to guide users through an experiential learning process that effectively bridges the gap between theory and practice.



## HEALTHCARE NUMERACY ASSESSMENT

Our Healthcare Numeracy Assessment is designed to develop and assess the 20 core areas of health numeracy that underpin and inform the safe practice of the Future Nurse proficiencies.



## ESSENTIAL SKILLS MODULE

This module requires demonstration of conceptual, calculation and technical measurement competence in tablet/capsule, oral liquid medicine, injection and IV infusion of crystalloid/colloid/blood product preparations and modes of administration.



## BODYWEIGHT & BODY SURFACE AREA MODULE

Designed to develop and assess the competencies required for safe medication practice on both adult and child patient populations and will require the student to factor either bodyweight or body surface area (BSA) into the problem-solving process.



## INJECTABLE MEDICINES THERAPY MODULE

Designed to develop and assess the competencies required for safe medication practice with the more complex problem solving and calculations associated with injectable medicine therapies involving IV bolus dose and intermittent and continuous infusion modes of administration.



## FUNDAMENTAL PRESCRIBING & PRACTICAL DOSING CALCULATIONS MODULE

Designed to provide an overview of the stages of the prescribing consultation and governance process in primary and secondary healthcare settings with a key focus on the core calculations required to generate an accurate prescription.



# Healthcare Numeracy Assessment



Our Healthcare Numeracy Assessment is designed to develop and assess the 20 core areas of health numeracy that underpin and inform the safe practice of the Future Nurse proficiencies.

## SAFEMEDICATE FRAMEWORK

Our analysis of the NMC standards has identified 20 core areas of health numeracy that underpin and inform the safe practice of the Future Nurse proficiencies.

## 20 CORE AREAS

1. Addition of Whole Numbers
2. Subtraction of Whole & Decimal Numbers
3. Multiplication of Whole Numbers
4. Division of Whole Numbers
5. Negative Numbers
6. Fractions
7. Decimals
8. Percentage
9. Ratio & Proportion
10. Conversion of Fraction to Decimal Equivalent
11. Conversion of SI Units
12. Problem Solving
13. Formula & Equations
14. Rounding of Numbers
15. Estimation
16. Indices & Logarithms
17. Statistics
18. Calculator Use
19. Measurement
20. Interpretation of Charts & Graphs

## HEALTHCARE NUMERACY ASSESSMENT FORMATS

- At point of entry to the NMC register: our HNA (Healthcare Numeracy Assessment) has been designed to be used throughout the duration of the pre-registration programme, to provide formative and summative fingerprints of competence development and achievement within the 20 core health numeracy skills. We've illustrated below an example of what a typical Point of Entry question will look like and how the complexity of the questions increase by the Point of Registration with context to healthcare.
- A 60-point assessment that will include 3 problems of increasing complexity, within each of the 20 mathematics/numeracy skills areas.

### POINT OF ENTRY

#### Fractions

Question 16 - You have answered this question correctly

Solve the fraction problem. Type your answer in the box below.

$$\frac{1}{2} \text{ of } 132 =$$

CORRECT ANSWER	
66	
YOUR ANSWER	
66	✓

### POINT OF REGISTRATION

#### Fractions

Question 18 - You have answered this question correctly

The patient below has renal impairment. The prescriber is required to use one-third ( $\frac{1}{3}$ ) of the normal drug dose. Solve the prescribing problem and calculate the correct renal impairment adjusted dose. Type your answer in the box below.

Estimated Glomerular Filtration Rate (eGFR)  
20 mL/minute/1.73 m<sup>2</sup>

**DRUG MONOGRAPH**  
Amlisupride

**Normal Drug Dose**  
Amlisupride  
300 mg  
twice a day

**Renal Impairment Dose Adjustment**  
Use one third normal dose if eGFR 10-30 mL/minute/1.73 m<sup>2</sup>

**MEDICINE (APPROVED NAME)**  
Amlisupride

**DOSE**  
? mg

**FREQUENCY**  
Twice a day

CORRECT ANSWER	
100 mg, twice a day	
YOUR ANSWER	
100 mg, twice a day	✓

# Essential Skills

YOUR FIRST STEPS TO DOSAGE CALCULATION COMPETENCE



Essential Skills is a highly interactive, visual and self-paced learning and assessment environment designed by experienced nurse educators and clinical pharmacists. It is designed to develop and assess the competencies required for safe medication dosage calculation at the point of registration.



461

Unique Medications



43219

Authentic Dosage Problems



13

Clinical Systems



503

Clinical Indications

## ESSENTIAL SKILLS LEARNING

Essential Skills can be used to replace traditional methods of teaching and assessing drug calculation skills and locates seamlessly within a typical pre-registration curriculum.

The integrated assessment features provide a platform for formative or summative assessments with automated and detailed diagnostic feedback on performance for the individual user and institution.

Essential Skills is designed to assist learners to:

- Understand the essential clinical features of dosage and rate problems.
- Recall and develop the computation skills required to accurately calculate dosages and IV infusion rates.
- Develop the technical skills to accurately measure the dose or rate using typical administration vehicles.
- Practice at their own pace and continually assess and evaluate their learning and understanding.

ROUTINELY SCHEDULED MEDICINES			Date
Date	Medicine (print generic name)		1/2/2022
1/2/2022	Ampicillin Injection		Administration Times
Dose	Route		06:00
500 mg	Intravenous Injection		12:00
Dose Calculation	Max Dose		-
25 mg/kg Four times a day, every six hours	500 mg per dose		18:00
Indication	Prescriber's Signature	Pharm	24:00
Urinary Tract Infection	Dr Jones		

**Drug Monograph**  
For Use in safeMedicate Only

**Medication Name**  
Ampicillin Injection

**Indication**  
Urinary Tract Infection

**Administration Route**  
Intravenous Injection

**Dose Calculation**  
25 mg/kg Four times a day, every six hours

**Maximum Dose**  
500 mg per dose

**Dispensed Dose**  
500mg per 10mL

CORRECT ANSWER

DOSE / VOLUME CALCULATION

$$\frac{500 \text{ mg}}{500 \text{ mg}} \times 10 \text{ mL} = 10 \text{ mL}$$

ADMINISTER THE CORRECT DOSE/VOLUME OF DRUG

YOUR ANSWER

DOSE / VOLUME CALCULATION

$$\frac{500 \text{ mg}}{500 \text{ mg}} \times 10 \text{ mL} = 10 \text{ mL}$$

ADMINISTER THE CORRECT DOSE/VOLUME OF DRUG

CONCEPTUAL  CALCULATION

TECHNICAL MEASUREMENT

fns/bodyweight based calculations as

# Bodyweight & Body Surface Area

BUILDING UPON THE BASICS



Designed to develop and assess the competencies required for safe medication practice with the more complex problem solving and calculations associated with bodyweight and body surface problems.

## BODYWEIGHT & BODY SURFACE AREA LEARNING

Bodyweight & Body Surface Module is designed to assist learners to:

- Use the 5-Rights of Medication Administration to deliver prescribed medications to both adult and child patients.
- Conceptually understand drug dosage and 24-hour maintenance fluid calculation problem-solving for doses standardised by bodyweight and body surface area (BSA).
- Interpret medication orders, medication product labels, monographs and other important information, and accurately calculate prescribed drug dosages and total and divided 24-hour maintenance fluid requirements, based on the patient's kilogram bodyweight and body surface area (BSA).
- Demonstrate medication measurement skill by selecting a correct syringe and measurement of the correct volume of prescribed medication; and for children and neonates, appropriate measurement of total and divided 24-hour maintenance fluid volumes and setting of millilitre per hour intravenous infusion pump rates.



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Unique Medications



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Authentic Dosage Problems



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Clinical Systems



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Clinical Indications

ROUTINELY SCHEDULED MEDICINES			Date
Date	Medicine (print generic name)	Administration Times	1/2/2022
	Ciclosporin Oral Solution	08:00	
Dose	120 mg	Route	Oral
Dose Calculation	2 mg/kg twice a day every 12 hours	Max Dose	2.5 mg/kg twice a day, every 12 hours
Indication	Severe Active Rheumatoid Arthritis	Prescriber's Signature	Dr Jones
		Pharm	

**Drug Monograph**  
For Use in safeMedicate Only

**Medication Name**  
Ciclosporin Oral Solution

**Indication**  
Severe Active Rheumatoid Arthritis

**Administration Route**  
Oral

**Dose Calculation**  
2 mg/kg twice a day every 12 hours

**Maximum Dose**  
2.5 mg/kg twice a day, every 12 hours

**Dispensed Dose**  
100 mg per 1 mL

**Patient's Name**  
Faith Mitchell

**Sex**  
Female

**Age**  
52 years

**Height**  
152 cm

**Bodyweight**  
60 kg

**Body Surface Area**  
1.6m<sup>2</sup>

**Diagnosis**  
Severe Active Rheumatoid Arthritis

**Allergies**  
Nil Known

Ciclosporin Oral Solution  
100 mg per 1 mL

CORRECT ANSWER

ORDERED DOSE CHECK

$$60 \text{ kg} \times 2 \text{ mg/kg} = 120 \text{ mg}$$

SAFETY CHECK

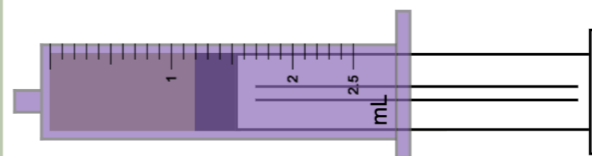
Has the prescriber calculated the ordered dose correctly?



DOSE / VOLUME CALCULATION

$$\frac{120 \text{ mg}}{100 \text{ mg}} \times 1 \text{ mL} = 1.2 \text{ mL}$$

ADMINISTER THE CORRECT DOSE/VOLUME OF LIQUID MEDICINE



YOUR ANSWER

ORDERED DOSE CHECK

CONCEPTUAL  CALCULATION

$$60 \text{ kg} \times 2 \text{ mg/kg} = 120 \text{ mg}$$

SAFETY CHECK

SAFETY CHECK

Has the prescriber calculated the ordered dose correctly?



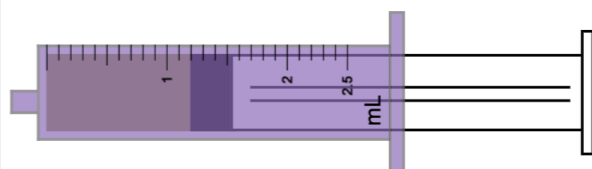
DOSE / VOLUME CALCULATION

CONCEPTUAL  CALCULATION

$$\frac{120 \text{ mg}}{100 \text{ mg}} \times 1 \text{ mL} = 1.2 \text{ mL}$$

ADMINISTER THE CORRECT DOSE/VOLUME OF LIQUID MEDICINE

TECHNICAL MEASUREMENT



fns/injectable medicines therapy as

# Injectable Medicines Therapy

ADVANCING YOUR PRACTICE



*Injectable Medicine Therapies is a highly interactive, visual and self-paced learning environment designed by experienced nurse educators and clinical pharmacists.*

## BUILDING UPON THE BASICS

This Advanced Skills module builds upon the dosage calculation competence developed within the Essential Skills module.

It provides a comprehensive assessment of cognitive competence that includes a range of safety checks, equation setup and calculation, and the accurate setting of rate of administration and volume of IV infusions.

The Injectable Medicine Therapies Module is designed to assist learners to:

- Develop and assess the competencies required for safe medication practice with the more complex problem solving and calculations associated with injectable medicine therapies such as IV bolus dose, intermittent and continuous infusions.
- Covers both adult and child populations and will prepare health professionals for safe IV medication practice on general and specialist wards, high dependency and intensive care units.
- Scrutinize medication orders and to identify errors in prescribed medication dosages.
- Use our unique authentic dimensional analysis system as the equation framework for solving injectable medicines calculations for intermittent and continuous infusions.



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Unique Medications



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Authentic Dosage Problems




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Clinical Systems



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Clinical Indications



**Patient's Name**  
Austin England

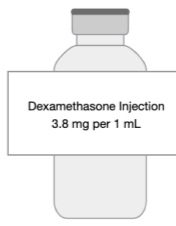
Sex: Male    Age: 55 years  
Height: 166 cm    Bodyweight: 73 kg

Body Surface Area: 1.8m<sup>2</sup>

Diagnosis: Cerebral oedema associated with malignancy

Allergies: Nil Known

ONCE ONLY MEDICINES			
Date	Medicine (print generic name)		
1/2/2022	Dexamethasone Injection		
Dose	15.2 mg	Route: Slow Intravenous Injection	
Dose Calculation	Max Dose: 16mg per dose	Time Given	
Indication: Cerebral oedema associated with malignancy	Prescriber's Signature: Dr Jones	Pharm	Date & Time of Dose: 1/2/2022 10:00



Dexamethasone Injection  
3.8 mg per 1 mL

**Drug Monograph**  
For Use in safeMedicate Only

**Medication Name**  
Dexamethasone Injection

**Indication**  
Cerebral oedema associated with malignancy

**Mode of Administration**  
Slow IV injection

**Dose**  
15.2mg

**Maximum Dose**  
16mg per dose

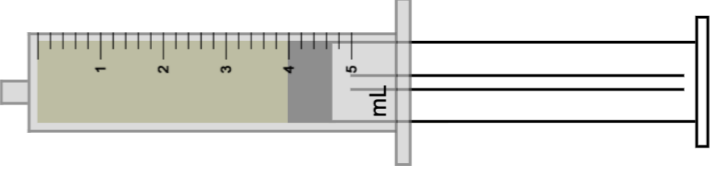
**Dispensed Dose**  
3.8 mg per 1 mL

**Administration Time**  
Administer over 5 minutes


**Administration Route**  
Slow Intravenous Injection

CORRECT ANSWER

ADMINISTER THE CORRECT DOSE/VOLUME OF DRUG

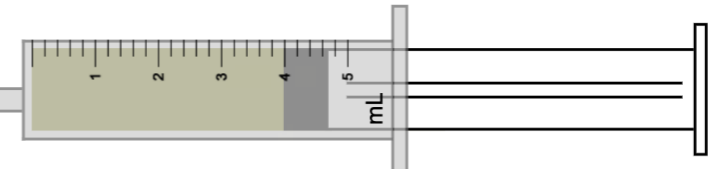


SETTING THE DURATION OF THE INJECTION




YOUR ANSWER


ADMINISTER THE CORRECT DOSE/VOLUME OF DRUG TECHNICAL MEASUREMENT



SETTING THE DURATION OF THE INJECTION TECHNICAL MEASUREMENT



**YOUR CALCULATOR USAGE**

15.2 ÷ 3.8 = 4 

# Fundamental Prescribing & Practical Dosing Calculations

PREPARE FOR PRESCRIBING



In combination with our Essential and Advanced Skills modules it is designed to prepare learners to be 'prescriber ready' and capable of undertaking further studies to become an independent prescriber.

## PRESCRIBING CALCULATIONS

This Advanced Skills module builds upon the dosage calculation competence developed within the Essential Skills, Bodyweight and BSA Calculation and Injectable Medicines Therapy modules.

It is designed to provide an overview of the stages of the prescribing consultation and governance process in primary and secondary healthcare settings with a key focus on the core calculations required to generate an accurate prescription. In combination with our Essential and Advanced Skills modules it is designed to prepare learners to be 'prescriber ready' and capable of undertaking further studies to become an independent prescriber.

Prescribing Calculations is designed to assist learners to:

- Understand, accurately complete and routinely check fundamental calculations relevant to prescribing and practical dosing in primary and secondary healthcare settings.
- Consider the patient assessment, diagnostic, treatment option and shared decision-making processes that need to be considered and completed as part of the wider prescribing competency framework.



461

Unique Medications



43219

Authentic Dosage Problems





13

Clinical Systems



503

Clinical Indications


 Patient Number <b>2147483647</b>  Patient's Name <b>Noel Rivera</b>  Sex <b>Male</b>  Date of Birth      Age <b>27/2/1951</b> <b>69 year(s)</b> <b>9 month(s)</b>  Height      Bodyweight <b>180 cm</b> <b>80 kg</b>  Body Surface Area <b>2m<sup>2</sup></b>  Renal Function (eGFR mL/minute/1.73m <sup>2</sup> ) <b>80</b>  Liver Function <b>Normal</b>  Diagnosis <b>Dementia in Alzheimer's disease</b>  Allergies <b>Nil Known</b>	Age 69 yrs 9 months  Title, Forename, Surname, & Address Noel Rivera 41 East Street Anytown CV5 7WC	<b>Drug Monograph</b> For Use in safeMedicate Only  <b>Medication Name</b> Memantine Hydrochloride Tablet  <b>Indications</b> Dementia in Alzheimer's disease  <b>Administration Route</b> By mouth  <b>Dose</b> <b>Adult</b> 5 mg, once a day, for 7 days. Dose to be taken at bedtime  <b>Maximum Dose</b> 20 mg daily  <b>Medicinal Forms</b> <b>Tablet</b> Memantine Hydrochloride 5 mg tablet
	DoB 27/2/1951  Patient Number 2147483647	
<b>Memantine Hydrochloride Tablet</b> <b>5 mg tablet</b> <b>5 mg (1 tablet), once a day</b> <b>Supply 7 tablets</b> (No more items on this prescription)		
Signature of Prescriber 		Date 30/11/2020
safeMedicate Health Authority A. Prescriber 456789 23 Safemed Street Anytown CV1 5DC Tel: 07777 999 111		

fns fundamental prescribing & practical dosing calculations pdc

PRIMARY HEALTHCARE ▾ CONSULTATION - CLINICAL EXAMINATION SUMMARY ▾

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safeMedicate



<b>Differential Diagnosis</b>	<ul style="list-style-type: none"> <li>• Viral URTI</li> <li>• Viral URTI</li> <li>• Bacterial URTI</li> </ul>
<b>Guidelines</b>	<ol style="list-style-type: none"> <li>1. NICE guidelines of management of CAP</li> <li>2. NICE guidelines for management of Asthma in Adults</li> <li>3. NICE guidelines for management of Type 1 Diabetes in Adults</li> </ol>
<b>Management</b>	<ul style="list-style-type: none"> <li>• Amoxicillin 500mg TDS, every 8 hours, PO for 5 days.</li> <li>• To return if symptoms don't resolve or any increased use in inhalers after 1 week, but if they take up to 6 weeks for cough to resolve (NICE, 2016).</li> <li>• Sick days rules for IDDM.</li> </ul>
<b>RED FLAGS</b>	<ol style="list-style-type: none"> <li>1. Increased respiratory rate.</li> <li>2. Productive cough.</li> <li>3. Crackles on auscultation.</li> </ol>

1:44

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# REVALIDATION

ACCREDITED LEARNING TO SUPPORT YOUR CPD



We can support your Revalidation:

Did you know, that safeMedicate is the market leading resource for supporting the development and assessment of competence in drug dosage calculations?

With up to 40% of nurses' time spent on drug administration, it is essential that nurses remain competent in this patient safety critical skill. safeMedicate is an accredited program that can support your revalidation journey within this domain of professional practice. On successful completion of one of our modules, you will receive a certificate of completion to support your revalidation portfolio of evidence.

**safeMedicate can support the following two elements of your Revalidation:**

## 35 HOURS OF CPD



You must have undertaken 35 hours of continuing professional development (CPD) relevant to your scope of practice as a nurse or midwife in the three year period since your registration was last renewed, or when you joined the register.

## 5 REFLECTIVE ACCOUNTS



You must have prepared five written reflective accounts in the three year period since your registration was last renewed or you joined the register.

# CERTIFICATE OF COMPLETION & REFLECTIVE ACCOUNT

Our learning modules have been accredited by the CPD Standards Office and each module equates to a set number of CPD hours.

On successful completion, we will award you with a certificate of completion which you can keep within your CPD Portfolio and use as evidence towards your Revalidation. We'll also give you the opportunity to consider and document aspects of your learning which can then be used as a basis for one of the five reflective accounts you will also need to submit as evidence as part of the revalidation process.



The CPD Standards Office  
**CPD PROVIDER: 50085**  
 2020 - 2022  
[www.cpdstandards.com](http://www.cpdstandards.com)



## ACCREDITED CPD

- CPD points ✓
- Certificate of Completion ✓
- Reflective account ✓

# Licence Costs & Purchase Options

## HIGHER EDUCATION PRICING

Duration / Module	Essential Skills	Bodyweight & Body Surface Area	Injectable Medicine Therapies	Prescribing Calculations	Essential Skills + 1 Module	Essential Skills + 2 Modules	Future Nurse Curriculum
6 Months	£6.00	£4.00	£4.00	£4.00	£7.00	£8.00	£10.00
1 Year	£10.00	£8.00	£8.00	£8.00	£12.00	£13.00	£15.00
2 Years	£15.00	£12.00	£12.00	£12.00	£18.00	£21.00	£25.00
3 Years	£20.00	£15.00	£15.00	£15.00	£25.00	£28.00	£30.00
4 Years	£25.00	£20.00	£20.00	£20.00	£30.00	£33.00	£35.00

## HEALTHCARE SYSTEM PRICING

Duration / Module	Essential Skills	Bodyweight & Body Surface Area	Injectable Medicine Therapies	Prescribing Calculations	Essential Skills + 1 Module	Essential Skills + 2 Modules	Future Nurse Curriculum
6 Months	£6.00	£4.00	£4.00	£4.00	£7.00	£8.00	£10.00
1 Year	£10.00	£8.00	£8.00	£8.00	£12.00	£13.00	£15.00



## PRICING STRUCTURE

All prices are exclusive of VAT and came into effect 1st September 2019.

For higher education institutions, we provide access to a range of module combinations across the suite of safeMedicate Essential Skills and Advanced Skills modules as 6-month, 1-year, 2-year, 3-year or 4-year options.

The Essential Skills module provides a learning and assessment platform that is congruent with the NMC Essential Skills Cluster for Medicines Management and meets the requirements for dosage calculation competence at the point of registration.

Should you wish to expose your students to the more complex calculations associated with either of our Advanced Skills modules then you can choose to include either or both to meet the needs of your curriculum.

Licences are typically purchased in bulk by the institution according to total student numbers on the course. Licences are issued on receipt of an official purchase order from the institution. All licences will be associated with the purchasing institution for student administration purposes.

On first implementation of safeMedicate at a particular higher education institution, if purchasing 3 year licences in bulk for 1st year students beginning their undergraduate studies, we are pleased to offer discounted prices for existing 2nd year and 3rd year students. Further details can be provided at time of purchase.

## SAFEMEDICATE ADMINISTRATOR

### LICENCE COSTS

There is no cost associated with administrator licences for faculty or healthcare system managers, or for access to our Administrative Portal (see below) when the institution purchases student or practitioner licences in bulk.

safeMedicate Customer Support is also provided to the institution at no additional cost.

# ADMINISTRATOR PORTAL

Tools and features to support the local management of safemedicate

We've made it simple to implement and manage safeMedicate within your organisation. Whether you're a healthcare educator or manager, our Administration Portal provides a single point of access to a range of powerful time-saving tools and features.

## ASSESSMENT MANAGER

Scheduling assessments for your learners using our Assessment Manager is a simple process that unfolds on the screen as you progress through making your choices and setting various options. For our Essential and Advanced Skills modules you can choose:

- Diagnostic or authentic assessment modes
- Assessment date and start time
- Assessment duration and availability
- Single or repeated events over set periods of days or weeks
- Specific cohorts or groups within cohorts
- Pre-defined assessment formats
- Administrator defined focused assessment formats
- Formative or summative options
- Once only or repeat attempts
- Availability of on-screen calculator
- Feedback availability

## FEEDBACK CENTRE

On completion of safeMedicate scheduled assessments, all results are immediately available for you to review via the Feedback Centre.

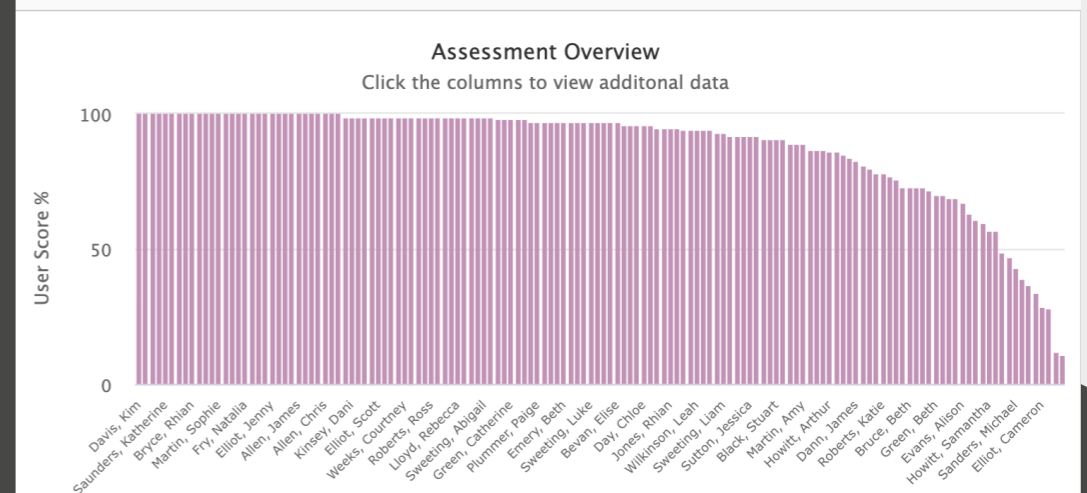
- Review cohort/group performance as bar charts and lists of individual users
- Interactive charts that allow you to drill down to results for individual users
- Print charts in various image formats or as PDF documents
- Show results as total scores or as percentages
- Identify any learners who did not take the assessment
- Choose when to release results to learners (summative assessments)
- External Examiner Share Feature
- Export results as an Excel spreadsheet for further analysis or for import into your VLE

### Assessment Feedback



Assessment Title	Mixed Assessment - Feb
Module	FNS Essential Skills - ADA
Section / Title	TC, LM, INJ, IV
Type	Summative
Area of Practice	Adult,-
Date	18/02/2021 00:00
Group	2020 (b) - Multiple Groups
Scheduled By	

Feedback for your chosen assessments is available



## ASSESSMENT FEEDBACK

safeMedicate makes it easy for you to monitor the degree to which learner's are engaging with the program and the progress they are making.

- Drill down to view detailed question-level results and feedback for individual users
- Rich visual feedback displays the problem elements (medication order and medication container label), the correct answer and the learner's answer
- Immediately identify which elements of the answer are correct or incorrect aided by direct comparison with the expert solution
- If a calculator has been used, see the recorded keystrokes
- When results are released, the same level of detailed feedback is available to the learner

## ENGAGEMENT MONITORING

safeMedicate makes it easy for you to monitor the degree to which learner's are engaging with the program and the progress they are making.

- Institution-wide Usage Statistics widget that provides a snapshot of system activity and engagement for 6 metrics over a range of pre-set time periods (e.g. usage within last 3 months)
- Search for and identify users who have not registered their accounts
- Search for and list users who have not engaged within pre-defined time periods (e.g. no engagement in last month)
- Export lists of non-engaging users as an Excel spreadsheet

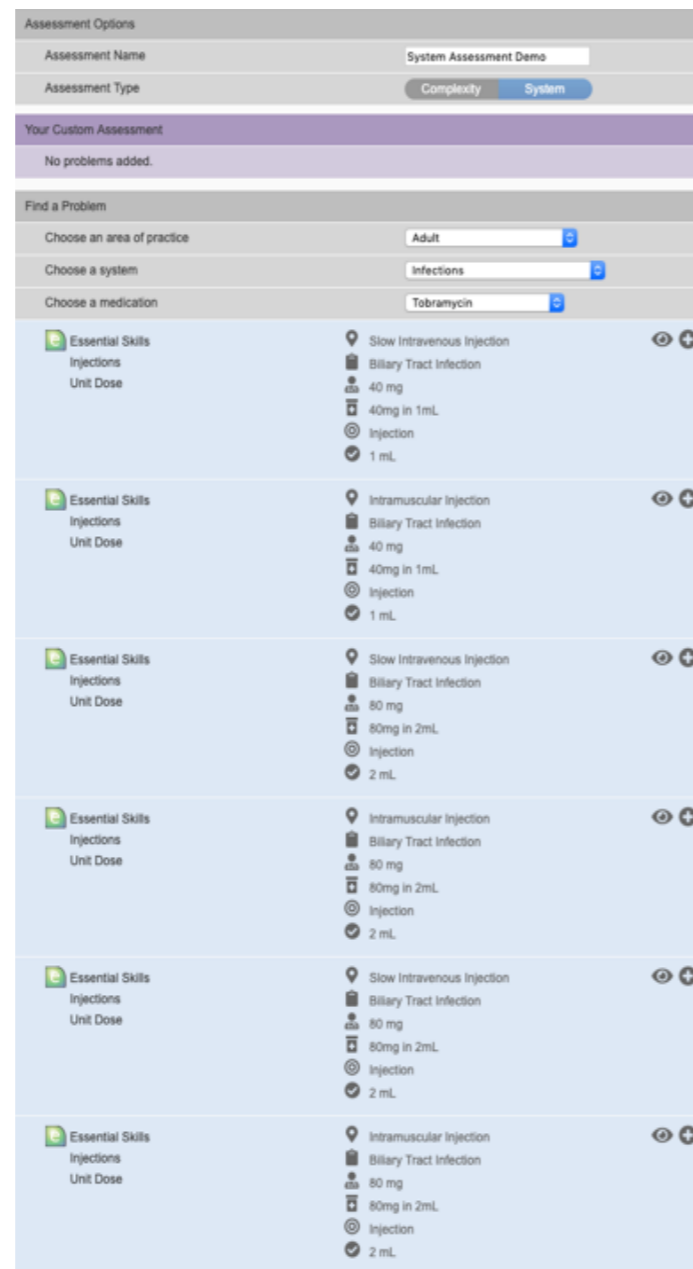
# FOCUSED ASSESSMENT BUILDER

Assessment scheduling just got easier

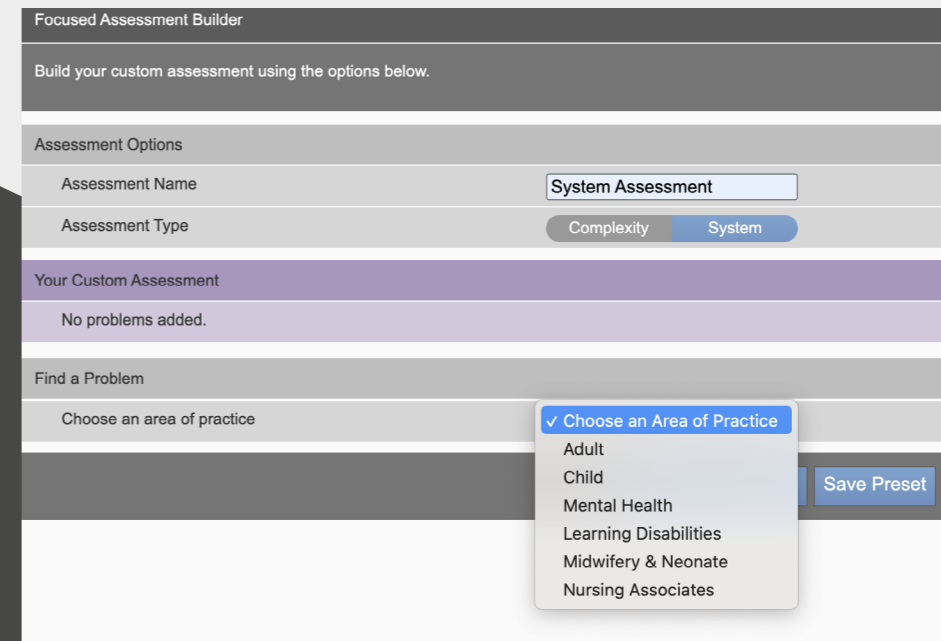
## FAB

Following the success of our current Flexible Assessment framework, we have developed a Focused Assessment Builder (FAB) that launched in September 2019. This provides the administrator to set a wide range of assessments by complexity level (e.g. specific levels within Essential Skills, Bodyweight/BSA & Injectable Medicines modules), or system-based (e.g., cardiovascular, nervous, endocrine system).

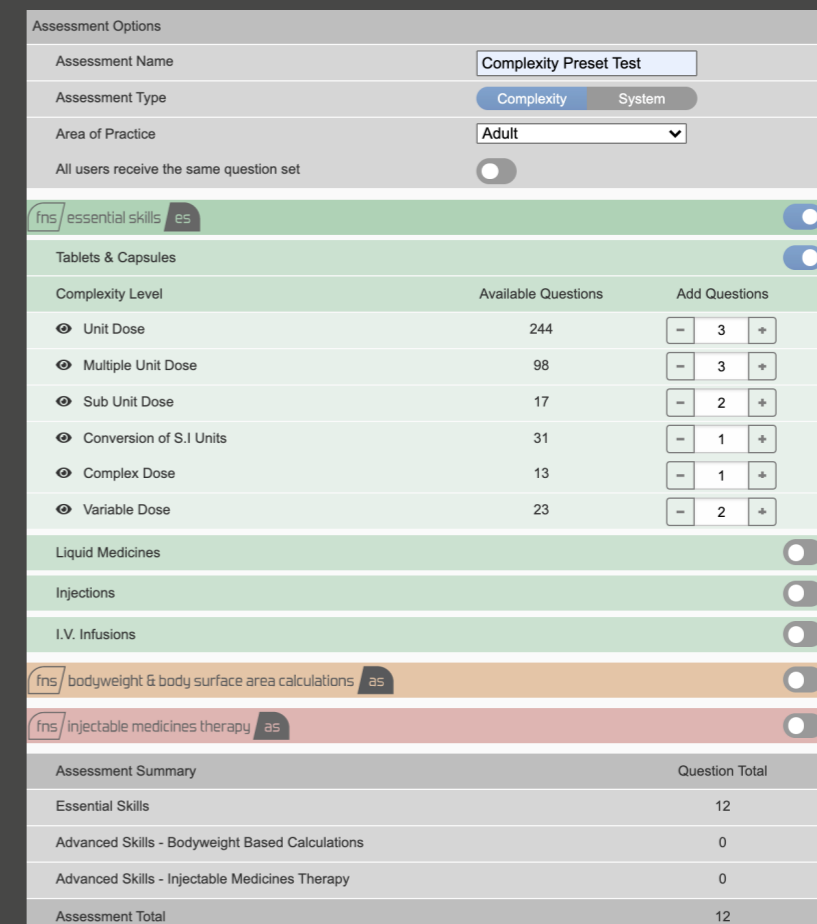
As an administrator you will have the ability to align safeMedicate assessments with individual modules of the adult, child, mental health., etc. curriculum. You will be able to create focused assessments centered on specific drugs in preparation for simulated or practice-based clinical experiences. Another great feature of our assessment builder is that once an assessment has been created, you will have the ability to save it as a pre-set or template for repeated use.



## SYSTEM BASED



## COMPLEXITY BASED





# Training Workshops & Webinars



*Expert tuition to support a successful implementation:*

*Designed specifically to help you get the most out of the software and to support its successful implementation within your organization.*

*Our workshops and webinars are for staff that will take responsibility for its local administration, supporting learners and monitoring their engagement and performance.*

## **WORKSHOP FORMATS**

### ON-SITE TRAINING

Workshops are delivered using a blend of seminar type presentation, discussion and hands-on computer training. Our professional trainers will come to your organization to deliver the workshop which typically lasts a full day.

On-site training is currently suspended until government guidelines allow.

### ONLINE TRAINING

Alternatively, our workshop can be delivered online as a short series of webinars by our professional e-learning specialists. Webinars comprise a blend of slides presentations, discussion and live product demonstration, typically delivered over 2 half-days. All webinars provide opportunity for wider discussion of topics presented.

## **TYPICAL WORKSHOP SCHEDULE**

- Introduction to the materials and underlying educational approach
- Competence in medication dosage calculation
- Overview of safeMedicate software suite:
  - Content and scope
  - Key features and functionality
  - Interpretation and optimization of learner performance
  - Administrative tools
  - Assessment types, scheduling and reporting
- Curriculum integration (higher education users)
- Strategies for successful organization-wide implementation
- Workshop/webinar evaluation



## **SAFEMEDICATE WEBINARS**

Our webinars are for staff who will take responsibility for local administration and supporting learners.

Please contact a member of staff for more information if you are interested in attending.



# Access and Security



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Authentic World offers higher education institutions and healthcare providers with the definitive online solution for developing, assessing and maintaining the essential and advanced skills that underpin competence within the domain of safe medication dosage calculation.

All of our products are web-based and our website is available 24 hours a day and 365 days a year from anywhere in the world providing you have access to the internet via a network or reliable broadband connection. All that is required to run our software is an up-to-date web browser such as Google Chrome, Microsoft Internet Explorer or Mozilla Firefox. Our user guides are also online in PDF format and require the Adobe Reader software to view them. Adobe Reader is a free download.



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Access to all our software is via our secure website portal providing encryption of the highest standard thereby offering the utmost level of security possible. This means you can rest assured that communications between your browser and our site are private and secure.

Please visit our website at [www.safemedicate.com](http://www.safemedicate.com) for more information.

You'll find everything you need to know about our company, the features of our safeMedicate software and our safeMedicate Interactive Demo (SID), that allows you to engage with and undertake example diagnostic assessments from our entire suite of safeMedicate environments.

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## CONTACT US

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[@safeMedicate](https://www.youtube.com/safeMedicate)