



# PMSC20003 Pharmacological Application in the Critical Care Setting

## Term 1 - 2020

Profile information current as at 07/05/2024 06:43 pm

All details in this unit profile for PMSC20003 have been officially approved by CQUUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

### General Information

#### Overview

This unit will provide you with advanced knowledge of all aspects of clinical pharmacology to allow you to function safely within the current and emerging critical care context. You will acquire advanced theoretical knowledge and develop advanced clinical judgement for competent critical care pharmacology practice.

#### Details

Career Level: *Postgraduate*

Unit Level: *Level 8*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

#### Pre-requisites or Co-requisites

Co-requisites PMSC20001 Advanced Clinical Assessment and Decision Making

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

#### Offerings For Term 1 - 2020

- Online

#### Attendance Requirements

All on-campus students are expected to attend scheduled classes - in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

#### Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

## Class and Assessment Overview

### Recommended Student Time Commitment

Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

### Class Timetable

#### [Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### [Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

### Assessment Overview

#### 1. **Presentation and Written Assessment**

Weighting: 40%

#### 2. **Portfolio**

Weighting: 30%

#### 3. **Online Test**

Weighting: 30%

### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Self-reflection

##### Feedback

Students need higher level knowledge of pharmacodynamics

##### Recommendation

Utilise existing online text and set specific readings to offer enhanced background information on pharmacodynamics, e.g. receptors, transmitters, etc.

## Unit Learning Outcomes

**On successful completion of this unit, you will be able to:**

1. Describe the indications, actions, routes of administration, contraindications, side effects and precautions of medications and fluids administered at a critical care level, and how you would evaluate the effects of administration
2. Apply theoretical knowledge of pharmacokinetic and pharmacodynamic principles with regard to medications and fluids administered at a critical care level
3. Investigate and justify the most effective pharmacological treatment options within the critical care context
4. Communicate knowledge of clinical pharmacology, toxicology and toxinology within therapeutic relationships.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Presentation and Written Assessment - 40%	•		•	•
2 - Portfolio - 30%	•	•	•	•
3 - Online Test - 30%		•		

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
1 - Knowledge	◦	◦	◦	◦
2 - Communication			◦	◦

Graduate Attributes	Learning Outcomes			
	1	2	3	4
3 - Cognitive, technical and creative skills	○	○	○	○
4 - Research			○	
5 - Self-management	○			
6 - Ethical and Professional Responsibility			○	○
7 - Leadership				
8 - Aboriginal and Torres Strait Islander Cultures				

## Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes							
	1	2	3	4	5	6	7	8
1 - Presentation and Written Assessment - 40%	○	○	○	○	○	○		
2 - Portfolio - 30%	○	○	○	○	○	○		
3 - Online Test - 30%	○		○					

## Textbooks and Resources

### Textbooks

**There are no required textbooks.**

#### Additional Textbook Information

There is not a required hardcopy textbook for this unit. Online access will be provided to Rang & Dale's Pharmacology (8th Edition) with direction given to relevant readings throughout the term.

You may also like to support your learning through a range of other texts or resources of your choice. For example, if you need to review pathophysiology or pharmacokinetics then you need to find a text that helps augment your learning in these areas (such as a generic medicine pharmacology text - see examples below). If you would like more detailed notes on classes of medications and to understand more clinical details, choose a text that focuses on applied concepts (such as RAPID Clinical Pharmacology by Batchelder et al or a reference guide). Otherwise, you may be able to get away with a previous textbook you already own. Some recommended texts/apps you may like to consider in addition to Rang & Dale include:

- Australian Medicines Handbook or MIMs
- Bullock, S & Manias, E. 2014, Fundamentals of Pharmacology (8th Edition), Pearson, Australia
- Bryant, BJ. Knights, KM. Darroch, S & Rowland, A. 2019, Pharmacology for Health Professionals (5th edition), Elsevier, Australia
- Caffey, M. (2012), Paramedic & Emergency Pharmacology Guidelines, Pearson, Australia
- Caffey, M. & Appiwork Pty Ltd. (2015), Emergency Pharmacology Guidelines (Version 1.3) [Mobile application software] - available on iTunes or Google Play.

Online access to a range of alternate resources will be provided on the unit Moodle page.

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

## Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)  
For further information, see the Assessment Tasks.

## Teaching Contacts

**Kirsty Shearer** Unit Coordinator  
[k.shearer@cqu.edu.au](mailto:k.shearer@cqu.edu.au)

## Schedule

### Week 1 - 09 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pharmacology review		

### Week 2 - 16 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Analgesia, anaesthetics, sedation & seizure management		

### Week 3 - 23 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Pharmacology for behavioural emergencies		
<b>Week 4 - 30 Mar 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Cardiovascular pharmacology 1		
<b>Week 5 - 06 Apr 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Cardiovascular pharmacology 2		
<b>Vacation Week - 13 Apr 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
<b>Week 6 - 20 Apr 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Drugs affecting clotting		<b>Presentation &amp; written assessment</b> Due: Week 6 Friday (24 Apr 2020) 11:45 pm AEST
<b>Week 7 - 27 Apr 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Blood products, fluids & tranexamic acid		
<b>Week 8 - 04 May 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Respiratory pharmacology		
<b>Week 9 - 11 May 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Metabolic & endocrine pharmacology		
<b>Week 10 - 18 May 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Pharmacology for infectious diseases & sepsis		<b>Portfolio</b> Due: Week 10 Friday (22 May 2020) 11:45 pm AEST
<b>Week 11 - 25 May 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Obstetric pharmacology		
<b>Week 12 - 01 Jun 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Toxicology		<b>Online quiz</b> Due: Week 12 Friday (5 June 2020) 11:45 pm AEST
<b>Review/Exam Week - 08 Jun 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic
<b>Exam Week - 15 Jun 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic

## Assessment Tasks

# 1 Presentation & written assessment

## Assessment Type

Presentation and Written Assessment

## Task Description

### Preamble

Pharmacology is forever evolving which results in health service providers consistently reviewing their drug therapy protocols to ensure that patient care is contemporary and evidence-based.

### Task Description

You are to review an existing clinical practice guideline from your health service provider and critically explore and evaluate the pharmacology involved to ensure it meets current evidence-based guidelines.

This assessment involves two parts.

**Part one** will require you to write an essay which must include an in-depth synopsis of the literature on the pharmacology involved in the guideline you have selected and where relevant, identify and explore any deficiencies. You will be required to support your review with recent research articles in relation to the pharmacology involved. It is preferred that the review is in narrative form (that is, explain the research in your own words). The word limit guide for the essay is between 2,500 and 3,000 words (excluding references).

Your essay should include:

Introduction

Review of research & discussion

- Contemporary condition management
- Does your current guideline meet contemporary evidence?
- Detailed information of the pharmacology of the drug/s involved/proposed
- Discuss the implications of making any changes to your selected clinical practice guideline or by introducing new pharmacology into paramedic practice.

Conclusion

- What are your recommendations?

Reference List

**Part two** will require you to summarise the information collected in Part one to develop a one-page scientific poster. Your poster should present a synopsis of the guideline and your findings from Part one, but in a more visual format. Exemplar scientific posters will be provided on the unit Moodle page.

There is no specific word limit here, as you will be using the information gained in Part one.

## Assessment Due Date

Week 6 Friday (24 Apr 2020) 11:45 pm AEST

## Return Date to Students

Week 8 Friday (8 May 2020)

Returned to students within 2 week turnaround

## Weighting

40%

## Minimum mark or grade

A minimum mark of 50% must be achieved on this assessment

## Assessment Criteria

### Part One - The essay will be assessed on:

Presentation and layout: information presented in a clear & logical sequence; content clearly articulated; literacy style; appropriate word count

Questions: selected condition and pharmacology meets criteria; most current literature used; introduction; review & discussion of research; detailed pharmacological insight; implications for practice; outlines recommendations

Referencing: use of Harvard referencing including reference list; all sources referenced appropriately

### Part Two - The scientific poster will be assessed on:

Required content: looking at the main points covered & content

Presentation: looking at visual engagement; use of visual elements; graphics & overall presentation

Mechanics: looking at grammar & spelling & referencing

**This assessment is worth 40% of your overall unit mark. The assessment rubric used in the marking of this assessment task can be found on the unit's Moodle page.**

## Referencing Style

- [Harvard \(author-date\)](#)

## Submission

Online

## Submission Instructions

Files are to be uploaded through Moodle

## Learning Outcomes Assessed

- Describe the indications, actions, routes of administration, contraindications, side effects and precautions of medications and fluids administered at a critical care level, and how you would evaluate the effects of administration
- Investigate and justify the most effective pharmacological treatment options within the critical care context
- Communicate knowledge of clinical pharmacology, toxicology and toxinology within therapeutic relationships.

## Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility

# 2 Portfolio

## Assessment Type

Portfolio

## Task Description

You will need to complete a clinical portfolio of a minimum of three (3) patient cases you have assessed and treated during your recent clinical work. The format of your portfolio can be self-determined, however it **must** include:

- A review of patient presentation, including chief complaint, history and physical examination. The history should include a review of the patient's own medications, including detail on each medication's indication, potential side-effects and interactions, and how these medications may impact upon the patients' current condition and chief complaint
- A summary of your non-pharmacological treatment of the patient
- A detailed assessment of the real and potential pharmacological treatment of this patient, including:
  - core pharmacology used & why
  - actual or potential critical care pharmacology to be used with a focus on:
    - relating the drug/s mechanism of action to the patient's condition & associated pathophysiology (that is, why the drug/s is/are indicated)
    - situations where the drug/s would be contraindicated
    - potential side effects & explanation of why they occur
    - potential interactions with the patient's current medications.

You will need to convey your comprehensive understanding of the patient's own, core and critical care pharmacology. You will need to articulate insight into the complexities of pharmacology used in the delivery of care in the critical care context, and give consideration to issues such as side-effects & interactions in the application of your clinical decision making. As such, selection of cases offering you the ability to demonstrate this knowledge is paramount.

## Assessment Due Date

Week 10 Friday (22 May 2020) 11:45 pm AEST

## Return Date to Students

Week 12 Friday (5 June 2020)

Returned to students within 2 week turnaround

## Weighting

30%

## Minimum mark or grade

A minimum mark of 50% must be achieved on this assessment

## Assessment Criteria

There is a 1,500 word limit for each patient case, it is therefore expected that each case presented will be concise. The portfolio will be assessed in accordance with the rubric provided on the unit's Moodle page.



Criteria include:

Overall presentation

- Organisation of presentation/layout
- Writing mechanics
- Formatting
- Referencing.

Content

- Thoroughness of history
- Thoroughness of physical examination
- Treatment administered
- Discussion of current pharmacology
- Recommendations regarding real or potential pharmacological treatment.

This portfolio is worth 30% of your overall unit mark.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

Portfolios are to be submitted electronically through Moodle

**Learning Outcomes Assessed**

- Describe the indications, actions, routes of administration, contraindications, side effects and precautions of medications and fluids administered at a critical care level, and how you would evaluate the effects of administration
- Apply theoretical knowledge of pharmacokinetic and pharmacodynamic principles with regard to medications and fluids administered at a critical care level
- Investigate and justify the most effective pharmacological treatment options within the critical care context
- Communicate knowledge of clinical pharmacology, toxicology and toxinology within therapeutic relationships.

**Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility

### 3 Online quiz

**Assessment Type**

Online Test

**Task Description**

You will be required to complete this online quiz by the end of Week 12, this quiz will become available in Week 11 and will have a specific time limit imposed to complete the quiz.

The quiz will be made up of multiple choice questions exploring content explored across the unit (Weeks 1-12) including lecture materials, online modules, links & required readings. The quiz will assess your ability to identify & apply the foundations of critical care paramedic pharmacology including pharmacokinetics, pharmacodynamics, mechanism of action, indications, interactions, contraindications & side effects. In addition, some questions in the quiz will explore your ability to demonstrate clinical decision-making for the use of pharmacology in the critical care context. This is an individual assessment with no collaboration allowed.

**Assessment Due Date**

Week 12 Friday (5 June 2020) 11:45 pm AEST

The quiz will open 0800hrs on Monday of Week 11 and closes at 2345hrs AEST (Australian Eastern Standard Time) on Friday of Week 12.

**Return Date to Students**

Exam Week Friday (19 June 2020)

The quiz will be marked and returned to students after every student has completed the test, within 2 weeks of close of

the quiz.

**Weighting**

30%

**Minimum mark or grade**

A minimum mark of 50% must be achieved on this assessment

**Assessment Criteria**

You will be required to answer each question correctly to receive the full marks allocated to that question. Non-attempts will score a zero mark. **This quiz is worth 30% of your overall unit mark. This assessment task must be completed by 2345hrs on the Friday of Week 12. In the absence of an approved extension, there will be no opportunity to complete the task after this date, and there will be no opportunity to apply a late penalty of five percent per day.**

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

You will be required to complete this task in an allocated time, there will be no option to save your answers and to go back to the quiz later.

**Learning Outcomes Assessed**

- Apply theoretical knowledge of pharmacokinetic and pharmacodynamic principles with regard to medications and fluids administered at a critical care level

**Graduate Attributes**

- Knowledge
- Cognitive, technical and creative skills

## Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

### Where can I get assistance?

For academic advice and guidance, the [Academic Learning Centre \(ALC\)](#) can support you in becoming confident in completing assessments with integrity and of high standard.

### What can you do to act with integrity?



#### Be Honest

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



#### Seek Help

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



#### Produce Original Work

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem