

2024



ASMIRT

Guidelines

PIE Examination Syllabus and Study Guide

Your profession. Your future.



There are a number of protected titles for medical radiation practice. They include:

Medical Radiation Practitioner (MRP)

Diagnostic Radiographer (DR)

Medical Imaging Technologist (MIT)

Radiographer

Nuclear Medicine Scientist (NMS)

Nuclear Medicine Technologist (NMT)

Radiation Therapist (RT).

For the purposes of our documentation we use the broad descriptor Medical Radiation Practitioner (MRP) recognising that it covers a range of areas of practice.



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Study Guide for Pilot Preliminary Image Evaluation (PIE) On-Line Imaging Examination

PIE Certification Examination

The examination is designed to test the candidate's ability to evaluate case study images in both the acute Emergency Department setting and the acute High Dependency / Intensive Care Unit (ICU) environment.

The examination involves a series of imaging case studies which will be displayed on a venue computer screen not exceeding 80 case studies, over a duration of 3 hours (180 minutes).

The PIE examination covers a range of anatomical sites with an approximate percentage of questions as listed below:

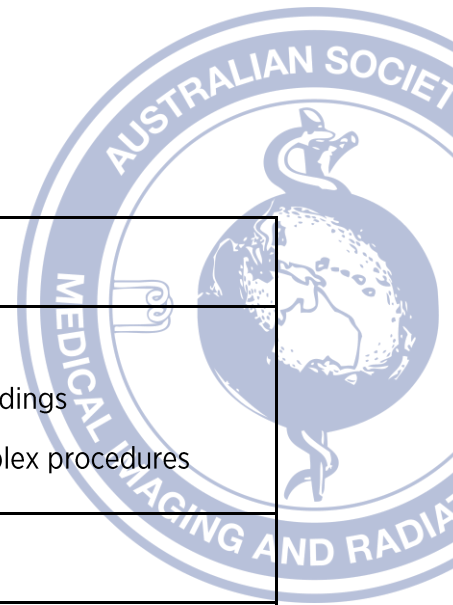
- Upper Limb (approximately 30%)
- Lower Limb (approximately 35%)
- Spine (approximately 15%)
- Chest and Chest Line Insertion (approximately 20%)

The questions are based on the diagnostic findings in the following subjects as stated by the Medical Radiation Practice Board of Australia (2019), Professional Capabilities Document.

- fractures of the long bones
- fractures of the carpal and tarsal bones
- common pathologies of the bony skeleton.
- acute dislocations of joints
- soft tissue signs of occult fractures
- fractures of the hip and pelvis
- disruption to the lines of alignment of cervical spine lateral projection and soft tissue signs of underlying injury
- non-alignment of the lateral masses of C1 and a break in the odontoid peg - fracture/dislocation of C1/C2
- fractures involving the thoracic, lumbar and sacro-coccygeal spine
- foreign bodies in head, neck chest & abdomen, particularly in the paediatric patient
- pneumothorax (spontaneous and tension), pneumomediastinum
- miss-positioning of important chest tubes and lines e.g. NGT, PICC

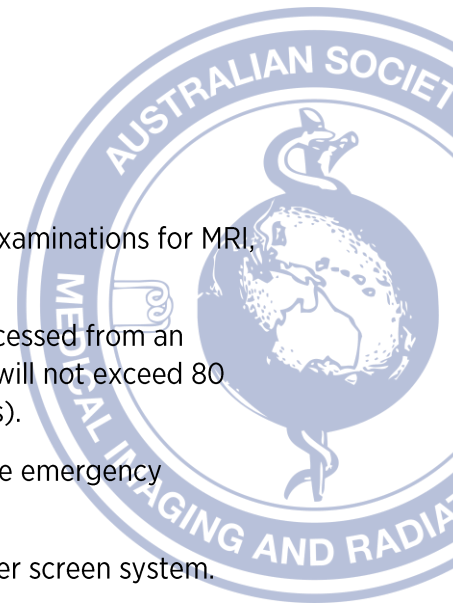
The successful candidate will need to be able to differentiate between a normal and abnormal case study, and where the case study is abnormal, the region of the body and identify the pathology.





Preliminary Imaging Evaluation (PIE)	
Outcomes <ul style="list-style-type: none"> • Evaluate normal anatomy, and unexpected or urgent medical findings • Operate proficiently in the clinical environment and during complex procedures 	
<i>Learn about:</i>	<i>Learn to:</i>
Upper Limb <ul style="list-style-type: none"> • Shoulder, humerus, elbow, forearm, wrist and hand. Lower Limb <ul style="list-style-type: none"> • Pelvis, hip, femur, knee, tibia, fibula, ankle and foot. Spine <ul style="list-style-type: none"> • Cervical, thoracic and Lumbar Spine. Chest <ul style="list-style-type: none"> • Chest line positioning, pneumothorax and pneumoperitoneum. 	Identify and describe radiographic features and radiological findings <ul style="list-style-type: none"> • Upper Limb • Lower Limb • Spine • Chest (within an ICU / HDU environment)
Identify and describe radiographic features <ul style="list-style-type: none"> • Upper Limb 	Identify and describe radiographic features <ul style="list-style-type: none"> • Upper Limb
<ul style="list-style-type: none"> • Lower Limb 	<ul style="list-style-type: none"> • Lower Limb
<ul style="list-style-type: none"> • Spine 	<ul style="list-style-type: none"> • Spine
<ul style="list-style-type: none"> • Chest (within an ICU / HDU environment) 	<ul style="list-style-type: none"> • Chest (within an ICU / HDU environment)





The PIE Certification Examination Structure – An Overview

This certification examination varies in its structure from the certification examinations for MRI, CT, Vascular Angiography, and Cardiac Angiography.

The examination involves a series of imaging case studies which will be accessed from an online examination platform and displayed on a local computer system. It will not exceed 80 case studies and will be conducted over a duration of 3 hours (180 minutes).

It is designed to test the candidate's ability of image evaluation in the acute emergency setting, and the acute medical setting within the HDU / ICU.

1. The examination will be performed on a specific local I.T. / computer screen system.
2. Each case study in each section will follow the same consistent approach for evaluating the correct answer / image evaluation.
3. The candidate will access the on-line examination using a unique username and password (provided by ASMIRT). Once the candidate has entered the portal, the PIE examination will be available on the dashboard for selection.
4. Once the candidate has selected the PIE examination and are ready to commence the examination, they are permitted to do so.
 - The candidate has three (3) hours to complete the examination. A timer commences count down on the screen to show elapsed time.
 - After three (3) hours has elapsed, the candidate will no longer have access to the examination.
5. With each case study question, the candidate will have three option pathways to choose from.
 - The case study is normal or has normal variants such as anatomical variants, non-traumatic pathology, old fractures, evidence of previous surgery, as well as devices such as (for example) a permanent pacemaker and sternotomy wires.
 - The case study has one abnormality **ONLY**.
 - The case study has two abnormalities.
6. A clinical history will be given for each case study. It will be generic in nature, to avoid privacy issues.
7. If the candidate examines a case study, and believes it to be normal, then they shall indicate that it is normal and proceed to the next question / case study. The answer of "Normal" should be placed in the free-text box below the last image of each case study.
8. If the candidate examines a case study, and believes it to be abnormal, then they shall indicate this by describing:
 - The side of the body part (if applicable)
 - The region of the body
 - The case study findings / pathology





The answer should be placed in the free-text box below the last image of each case study.

Answers should be written out in full for example:

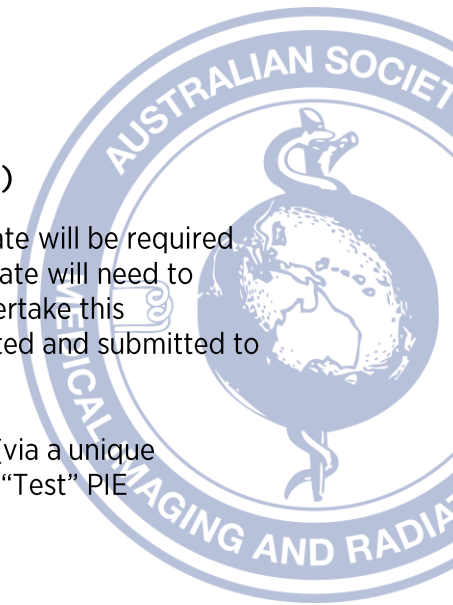
- Right Ulna fracture
OR
- R Ulna #

Reading Material

These texts / webinars are considered suitable to provide the applicant with a sound understanding necessary for study.

1. Bontrager, K. L., & Lampignano, J. P. (2015). Textbook of Radiographic Positioning and Related Anatomy (8th ed.). St Louis: Elsevier Mosby.
<http://www.elsevierhealth.com.au/bontragers-handbook-of-radiographic-positioning-and-techniques-9780323485258.html>
2. Merrill's Atlas of Radiographic Positioning and Procedures
3. McQuillen Martenesen, K (2015) Radiographic Image Analysis (4th ed). St Louis: Elsevier Mosby.
4. <http://www.elsevierhealth.com.au/radiographic-image-analysis-9780323280525.html>
5. Carver, E., & Carver, B (2012). Medical Imaging: Techniques, Reflection and Evaluation: Elsevier Health Sciences
6. European Society of Radiology online education services at www.myesr.org/education/online-services <https://learn-myesr.talentlms.com/index>
7. Lightbox Radiology Education provides face-to-face radiology courses and online e-learning solutions at <https://lightboxradiology.com/>
8. Everlight Radiology webinars at <https://www.everlightradiology.com/au/news-events/>
9. Radiopaedia at <https://www.radiopaedia.org>
10. The Radiology Assistant at <https://www.radiologyassistant.nl>





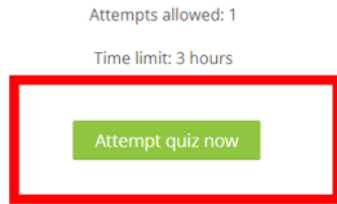
Pre – PIE Examination Platform Access (supervisor and candidate)

1. Once the candidate has registered for the examination, the candidate will be required to nominate a supervisor to supervise this examination. The candidate will need to negotiate with the supervisor an appropriate date and time to undertake this examination. A supervisor declaration form will need to be completed and submitted to ASMIRT for approval.
2. Once the supervisor has been approved, they will be given access (via a unique username and password) to the examination portal to undertake a “Test” PIE Examination.
 - URL link
 - Username: xxx
 - Password: xxx
3. This will ensure that the supervisor will be able to test the local computer that will be used for the examination to check any workplace “firewall” issues, suitability of the room/location including noise and light, functionality of the examination platform, and the examination process.
4. Concurrently, the candidate will be provided with their unique username and password, to enable the candidate to undertake a “practice” examination of anywhere between 2 to 4 questions to ensure there is an understanding of the functionality of the system.
5. ASMIRT recommends that the above checks by the supervisor and the examination preview by the candidate should be undertaken a week before the actual examination, on the actual computer that will be used for the examination. This will ensure any issues are addressed prior to the examination sitting.
6. The candidate will be required to click on top right-hand side of the page and insert their unique username and password, then click on the green arrow to log in.



7. The candidate will then be presented with the examination. When the candidate is ready to begin, click on green button **ATTEMPT QUIZ NOW**.



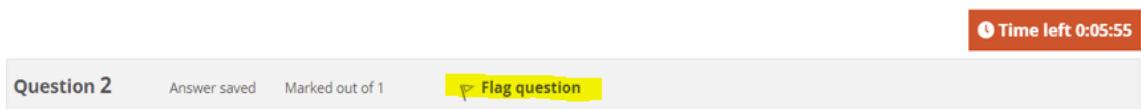


- For each question, upon viewing, the candidate will be presented with a case study history and a set of instructions.

As an example:

***M/77, Fall onto right elbow, mild tenderness posteriorly over site of skin tear. ?
Fracture***

- You will need to:
View the images provided and indicate whether this is a normal, or abnormal study. If the study is normal, indicate this in the free text answer box provided below the images, and then please proceed to the next question.
- If the study is abnormal, indicate the side, (if applicable), the region, and the associated pathology/findings in the free text answer box provided below the images.
- To re-iterate, if you believe that the case study is normal, please type in the word “Normal” in the free text box and proceed to the next question. If the study is abnormal, indicate the side, (if applicable), the region, and the associated pathology/findings.
- If the candidate is unsure about a question and would like to return to it later, they can “flag” the question by click on the flag.

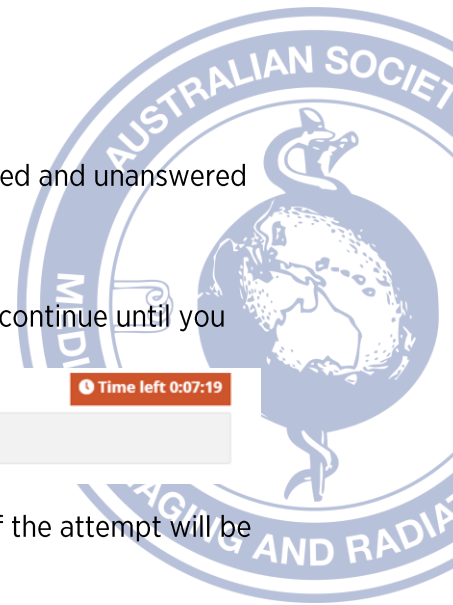


- This will also appear on the candidate’s Quiz Navigation section (located in the top right-hand corner of each case study) as a red flag to highlight the question that they would like to return to.



- The candidate should also note that once the question has been completed, that question will be highlighted in “grey” on the “Quiz Navigation” section on the right-hand side of the examination (See image above). The Quiz Navigation will indicate how many questions have been completed and the sections the questions are located in.





15. Unanswered questions will be shown as blank. Those that are flagged and unanswered have a red flag and are blank.

16. Please take note of the timer. Once the exam commences, this will continue until you have completed the exam.

Time left 0:07:19

Question 5 Not yet answered Marked out of 1 [Flag question](#)

17. Once all the exam questions have been completed, the summary of the attempt will be displayed.

General Knowledge Quiz

Summary of attempt

Question	Status
1	Not yet answered
2	Answer saved
3	Answer saved
4	Answer saved
5	Answer saved

[Return to attempt](#)

Time left 0:06:43

This attempt must be submitted by Thursday, 14 October 2021, 10:35 AM.

[Submit all and finish](#)

Quiz navigation

1 2 3 4 5

18. You will have an opportunity to go back to any flagged questions to change / provide an answer if there is time left.

19. Click on **RETURN TO ATTEMPT** and select the question you wish to return to.

20. Once you have completed all the questions, the Quiz Navigation boxes will all have a grey section.

Quiz navigation

1 2 3 4 5

[Show one page at a time](#)

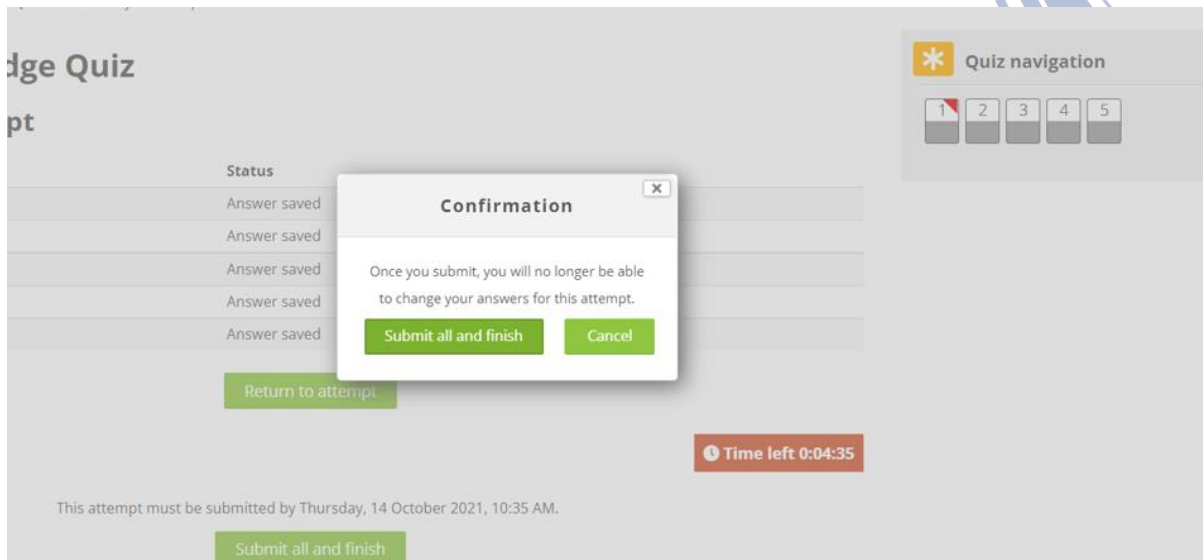
[Finish review](#)

21. By unticking the flag, it will remove the flag from the question and the quiz navigation. To save confusion, remember to uncheck the flag once you have answered the question.

22. Once the candidate has submitted all answers, the questions and selected responses will appear. Complete the process by scrolling to the bottom of the page and click on **FINISH REVIEW**.



23. Once the candidate is satisfied that all answers have been completed, click on **SUBMIT ALL AND FINISH**.
24. The candidate will be provided a confirmation text box. Upon completion of the examination, click on **SUBMIT ALL AND FINISH**. Make sure that this green button has been clicked prior to the time expiring, to ensure that your answers are recorded, and the exam completed.



25. Candidates will only have **ONE** attempt to sit this examination.



ASMIRT Recommendations

- 1) You will have a twenty (20) minute time limit on the Pre – PIE examination. Use as much of that time to ensure you are completely familiar with all possible combinations of the examination, in particular the “Answer” box, with the ability to free text as well as the “Red Flag” system, and the “Quiz Navigation” system.
- 2) There may be a tendency for those candidates who have formally studied image interpretation to over answer the question. For those case studies considered “Abnormal”, there are three essential parts to the answer, indicate the side, (if applicable), the region of the body, and the associated pathology/findings.
- 3) There is a possibility of candidates misspelling words in their answers, although a spell checker can be used. There will be no deduction of marks for misspelling of words, unless the word cannot be interpreted at all by the examination markers.
- 4) ASMIRT would recommend that body region and pathology / finding abbreviations (such as DR, MT or Ptx for example) are **NOT** to be used when answering the question.

The marking examiners will accept the following:

- # (Instead of the word “Fracture”)
- L. (Instead of the word “Left”)
- R. (Instead of the word “Right”)



PIE Certification Examination Summary

- 1) The candidate will be given access (via a unique username and password) to the PIE Certification Examination once registration processes and supervisors have been verified.
- 2) The candidate will negotiate an agreed date and time with their supervisor to sit the examination. At this agreed date and time, the examination can commence. To ensure that there is appropriate examination support from the ASMIRT certification team, Candidates sitting this examination in both Australia and countries outside of Australia will need to ensure that the examination time is conducted within an Australian time zone of 8am – 8pm AEST.
- 3) It is the assumption of the examination markers that the “Test” Pre - PIE examination has been attempted to ensure that the candidate understands both the requirements of the examination and the examination functionality.
- 4) The examination’s time duration is 180 minutes to answer 80 questions. After the allotted 180 minutes, the examination will automatically be closed.
- 5) If the candidate finishes the examination before the allotted time expires, the **SUBMIT ALL AND FINISH** button must be selected. This ensures that all answers are recorded.
- 6) This examination will be conducted over a designated period of one week. This allows for both flexibility and ease for both the candidate and supervisor. Examination marking will commence once the examination period has concluded.
- 7) All ASMIRT examinations are three hours in length. Candidates may be sitting in an examination room with other candidates sitting other examinations with the same supervisor. They may be leaving at different times depending on how quickly they complete their examination. Candidates may leave early but please be respectful of other candidates (if applicable).
- 8) Candidates are not to screen capture, take photos or write case questions down during the examination.
- 9) Examination results will be emailed to candidates within a fortnight of the examination week concluding.
- 10) In the instance that there are unforeseen circumstances with the technology, the supervisor will contact the ASMIRT certification team to promptly report the problem, and a new date and time will be negotiated with the candidate to re sit the examination.





Document Details

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1	MK	16/12/21			
2	MK	18/5/24			

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