

# **Radiology Postgraduate Training Document**

**Radiology Postgraduate Training Committee**

**Malta Association of Radiologists and Nuclear Medicine Physicians  
(MARNMP)**

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## **1. Introduction**

The Radiology training document sets a framework basis for post-graduate Radiology training in Malta. The Malta Association of Radiologists has approved the training document that was formulated by the Post-graduate Radiology Training Committee. It also meets the requirements of the Specialist Accreditation Committee.

The document identifies aims and objectives of training; it defines the curriculum and specifies the competencies that are required for progression through every year of training. It clearly outlines the requirements for certification of completion of training. It also defines the role of the Annual Review of Competency Progression (ARCP) and the process of premature termination of training, including the appeals mechanism.

## **2. Aims and Objectives of Radiology postgraduate training.**

The aims of training are to develop the knowledge, skills and attitudes required to practice Radiology competently and responsibly as an accredited specialist.

The objectives of training are:

- a. To acquire all core competencies of the specialty as outlined in the curriculum.
- b. To enable the trainee to develop skills and attitudes that enable him/her to practice safely and competently and to serve as a basis for lifelong continued medical education and professional development.
- c. To help the trainee identify and develop areas of subspecialty interest;
- d. To acquire the skills of audit and appraisal.

## **3. The Radiology Postgraduate training committee.**

The Malta Association of Radiologists is the specialist association responsible for the Training Programme.

The Radiology postgraduate training committee is the body that shall determine, monitor and review the implementation of the Training Programme. The committee will establish strategy and policy development to ensure such implementation. The Radiology postgraduate training committee will include the postgraduate training coordinator as chairperson and a number of members that include (i) the deputy training coordinator(s); (ii) a representative of the Medical Imaging Department Chairperson; (iii) a representative of the Malta Association of Radiologists and Nuclear Medicine Physicians (MARNMP).

The PGT committee shall meet at least twice a year and report to the PGT Lead.

Decisions shall be taken by consensus and only where this fails by majority vote. Each member present shall have the right to vote. In case of parity of votes, the chair shall have the right to add a casting vote.

The functions of the PGT committee shall be as follows:

- (a) To advise the Malta Association of Radiologists on the competencies and content of the Training Programme.
- (b) To coordinate the delivery of the Training Programme, including the selection, monitoring and evaluation of training attachments/modules.
- (c) To ensure regular assessment and appraisal of trainees.
- (d) To recommend trainees for specialist accreditation to the Specialist Accreditation Committee at the end of training.
- (e) To deal with any other matter relating to postgraduate radiology training.

#### **4. Guiding principles**

Patient safety must always be placed at the centre of healthcare. High quality patient care depends among other aspects, on robust training of competent specialists that can work effectively in a multidisciplinary team environment. Such training should be carried out in line with modern radiology curricula. Learning in and from clinical practice in a supervised, mentored environment is the most effective way for professionals to develop their expertise.

Radiologists are committed to lifelong learning in, and from, the practice of radiology in the clinical environment and through repeated clinical experience. Radiology trainees will be expected to develop critical thinking and professional judgment, especially where there is clinical uncertainty. Every clinical experience is a learning opportunity and should be reflected upon from the perspective of developing skills, acquiring clinical/radiological acumen and improving performance. By doing this, an individual demonstrates their commitment to lifelong learning and continuing professional development. Doctors must continuously work to improve performance, ie improve what they actually do as distinct from what they are capable of doing.

#### **5. Definitions and roles**

- (a) Post-graduate training coordinator:** The PGT coordinator is recruited for a term of three years after an open application process. The Training Co-ordinator has the responsibility for the organisation and smooth running of the training programme, co-ordinated through the postgraduate training committee and supported and supervised by the Director General Health Care Services (MHEC Circular 26/2008). The PGTC has the following roles: (i) To set up and chair the PG Radiology Training Committee; (ii) to manage and administer the Postgraduate Training Programme in Radiology; (iii) liaise with the Maltese Association of Radiologists in view of all training-related matters; (iv) co-ordinate appraisal and assessment of trainees as part of the process leading to the award of the Certificate of Specialist Training; (v) work with the appropriate authorities on manpower planning relating to trainee numbers and appropriate rotation of trainees so as to achieve a quality standard of post-graduate training; (vi) work with trainers within Radiology and trainers from

other relevant specialities in the organisation and / or delivery of regular training for specialist trainees; (vii) work in close collaboration with the Lead Training Co-ordinator in the organisation and / or delivery of regular training for trainers; (viii) work with the Lead Training Co-ordinator in the organisation and / or delivery of training for Radiology trainees; (vii) ensure and supervise assignment of trainees to trainers; (viii) establish appropriate mechanisms to ensure quality assurance of the training programme; (ix) prepare an annual report on the workings of the training programme and budget for subsequent year; (x) perform the role of, or delegate an educational supervisor for every trainee in the training scheme.

**(b) Deputy postgraduate training coordinators:** At present, there is no official post of deputy postgraduate training coordinator for Medical Imaging. The PGT committee has felt the need to have two Consultant Radiologists that fulfil this role. The deputy PGT coordinators are recruited internally to assist the PGT coordinator in all his/her functions as deemed appropriate by the PGT committee. It is up to the PGT committee to select suitable candidates to fulfil this role, up until when there is an officially recognized post of deputy PGT coordinator(s).

**(c) Educational supervisor:** An educational supervisor is appropriately trained to be responsible for the overall supervision and management of a specified trainee's educational progress during a training year. The educational supervisor is integral to the appraisal process. A trainee appraisal with the educational supervisor will include feedback on performance, review of outcomes of assessments, induction to posts and career advice. The educational supervisor (ES) will (i) ensure that the programme is appropriate for the doctor's needs; (ii) be responsible for the radiology trainee's educational agreement; (iii) meet with the radiology trainee at the beginning of each placement to agree how the learning objectives for this period of training will be met; (iv) help radiology trainees by reviewing their learning needs in the light of achieved goals; (v) review the radiology trainee's learning ePortfolio; (vi) support the trainee through any difficulty; (vii) tell the chairperson, PGTC of serious weaknesses in their trainee's performance that have not been dealt with.

**(d) Clinical supervisor:** A trainer is selected and appropriately trained to be responsible for overseeing a specified radiology trainee's clinical work and providing constructive feedback during a training placement. Clinical supervisors may/will change on a day-to-day basis depending on the rota for each radiology trainee. A clinical supervisor will usually be the consultant to whom a radiology trainee is directly responsible for their clinical work. There will be frequent contact between them. The clinical supervisor is responsible for (i) ensuring that their radiology trainees are never put in a situation where they are asked to work beyond their competence without appropriate support and supervision. Patient safety must be paramount at all times; (ii) meeting with the radiology trainee at the beginning of each placement to discuss what is expected in the placement, learning opportunities available and the trainee's learning needs; (iii) ensuring that the clinical experience available to the trainee is appropriate and properly supervised; (iv) monitoring, supporting

and assessing the radiology trainee's day-to-day clinical and professional work; (v) providing regular feedback on the trainee's performance; (vi) undertaking and facilitating WpBA; (vii) allowing the trainee to give feedback on the experience, quality of training and supervision provided; (viii) discussing serious concerns with the educational supervisor about a trainee's performance, health or conduct; (ix) meet with the radiology trainee to assess whether they have met the necessary outcomes and complete an end of placement review form for each placement

**(e) Trainee:** A medical doctor who has - through a competitive interview - acquired an appointment for a designated training post in Radiology.

**(f) Specialist:** A doctor registered as a Specialist in Radiology by the Medical Council of Malta.

## **6. Appraisal**

Appraisal identifies the learning needs of the individual trainee and sets goals. It is primarily intended for the trainee, is conducted in-house and should be informal. It must be proactive and not reactive.

The trainee will undertake regular (a) induction, (b) middle and (c) end appraisals with the respective Education and Clinical supervisors, as outlined in the curriculum.

### **a. Log Book**

Logbooks should be used for documenting the skills and experience attained and to facilitate reflective learning. Logbooks are mandatory for all interventional procedures irrespective of special interest. The training objectives identified in this curriculum document (encompassing knowledge, skills and behaviors) are mapped with the appropriate assessment tools, which can be used to illustrate proof of learning across the curriculum. All these methods and tools are included in the ePortfolio. These training objectives are used to assist trainee appraisal and assessment during specialty training and when achieved can verify that training has taken place to the required standard for a Certificate of Completion of Training (CCT) to be awarded.

## b. ePortfolio

The ePortfolio is the record for documenting assessments and other achievements. It is essential that radiology trainees populate the ePortfolio as it will be used to inform the end of year report by the education supervisor.

## c. End of Training Year Appraisal

The results of educational activities for an academic year will be drawn together and included in a formal structured educational supervisor's report. This will cover the overall performance of the trainee in each placement. The overall judgment of a trainee will include a triangulated view of the doctor's performance, which will include their participation in educational activities, appraisals, the assessment process and recording of this in the ePortfolio. The outcome of the final appraisal discussion should be agreed by both the radiology trainee and the educational supervisor and recorded in the trainee's ePortfolio in the structured supervisor's report. Placement reports put together in an annual structured educational supervisor's report will form the basis of the education supervisor's recommendations.

## 7. Assessment

Assessment is a selection process that tests competence and progress, primarily in the public interest. The trainee is judged against predetermined (minimum) standards to confirm fitness to pass on to the next phase of training and, ultimately, onto the Specialist Register with the award of the Certificate of Completion of Training (CCT). Assessment should be formal, independent, objective, valid and robust.

**Purpose** The assessment system included in the curriculum is intended to

- a. Enhance learning by providing formative assessment, enabling trainees to receive immediate feedback, measure their own performance and identify areas for development;
- b. drive learning and enhance the training process by making it clear what is required of trainees and motivating them to ensure they receive suitable training and experience;
- c. provide robust, summative evidence that trainees are meeting the curriculum standards during the training programme;
- d. ensure trainees are acquiring competencies within the domains of Good Medical Practice;
- e. assess trainees' actual performance in the workplace;
- f. ensure that trainees possess the essential underlying knowledge required for Clinical Radiology;
- g. the Annual Review of Competence Progression (ARCP) is the culminating part of the assessment system;
- h. identify trainees who should be advised to consider changes of career direction.

## **Assessment methodology**

### **a. Continuous assessment**

Improvement in clinical practice will only happen if regular review leads to constructive feedback. Thus, continuous review and assessment is a fundamental part of clinical radiology training. Radiology trainees are expected to demonstrate improvement and progression during each attachment. It is anticipated that radiology trainees will increasingly reach higher levels of attainments as they progress through their training. It is important that they arrange and undertake assessments in a timely and educationally appropriate manner spread throughout the year. Arriving at the overall assessment and judgment of the radiology trainee must be based on multiple assessments by many assessors, on multiple occasions. During core training, within a typical three month placement, an individual consultant/assessor is unlikely to build up a coherent picture of competences, let alone performance, of an individual trainee. Therefore, the PGT coordinator will ensure that there is a local faculty of trainers capable of building a balanced judgment of a trainee's performance supported by the workplace based assessment results. Such an approach will prevent any individual having undue influence regarding a trainee's progression.

### **b. Self-Assessment**

Radiology trainees have a personal responsibility to undertake self-assessment as an integral part of their professional life. It is good educational practice for this to be stated clearly and discussed fully during induction.

### **c. Assessment System and Tools**

Radiological practice will be assessed using an integrated package of workplace based assessments and summative examination of knowledge and radiological skills, which will sample across the domains of the curriculum. The assessment methods are fit for purpose and mapped onto the curriculum in an integrated way. The assessments will generate structured feedback for trainees within core radiological training and level1/2 training. The assessment tools have been selected on the basis of their fitness for purpose.

### **d. Summative Assessment**

The First FRCR Examination (Physics module) and Final FRCR Part A Examination test knowledge through single best answer (SBA) questions. The First FRCR Examination (Anatomy module) tests knowledge by requiring the identification of normal anatomical structures on images. The Final FRCR Part B Examination assesses clinical competence (interpretative, analytical and communication skills).

### **e. Formative Assessment**

Workplace based assessment will be the cornerstone of assessment for day-to-day practice. There is a range of tools available for this use. These have undergone or are undergoing evaluation in terms of their feasibility, reliability, validity and reproducibility. The generic and radiologically specific workplace based assessment tools are summarized in the following list that is reproduced in the curriculum:

## Assessment Method Key

- 1-First FRCR Examination
- 2-Final FRCR Part A Examination
- 3-Final FRCR Part B Examination: rapid reporting session component
- 4-Final FRCR Part B Examination: reporting session component
- 5-Final FRCR Part B Examination: oral examination
- 6a-1st year A/E plain film reporting assessment
- 6b - 1st year Ultrasound assessment
- 7- 2nd year CT brain reporting assessment
- 8- End of 3rd year assessment
- 9- Module forms
- 10-Mini – IPX
- 11-Rad – DOPS
- 12-Lecture program / Lectures done on RITI
- 13-Observed / supervised investigations or procedures
- 14-Audit Assessment
- 15-Certificate (Course, Conference etc.)
- 16-Publication / presentation
- 17-MDT form
- 18-Multisource feedback
- 19-Teaching timetable (e.g. medical students, radiographers, junior trainees, FY doctors)

### f. Annual Review of Competency Progression

Every trainee will be interviewed by the ARCP board at the end of every academic year. The ARCP board will review the trainee's portfolio; the education supervisor report and any other training-related issues related to the preceding training year.

The ARCP board will consist of at least 3 consultant/resident specialist radiologists. The PGT coordinator or delegate training coordinator and the chairperson MID or his/her representative should be present on the board.

The ARCP board must be satisfied that the trainee has achieved the minimum competencies listed for every year of training. The board will also take into consideration any issues related to integrity, honesty, probity and patient safety when deciding the ARCP outcome.

The possible outcomes of the ARCP process are listed below:

1. **Pass** with progression into the next year of training. Indicative of satisfactory progression.
2. **Unsatisfactory progression** results from failure to reach core targets expected for that year of training. This will result in **Directed training without progression**. The trainee will repeat the given year of training with directed training aiming at redressing the deficiencies in competencies.

The possible outcomes of ARCP that follows directed training without progression; i.e. the **ARCP of a repeated year** are:



1. **Pass** with progression into the next year of training. Indicative of satisfactory progression.
2. **Fail** results from failure to reach core targets expected for that year of training. A fail outcome may also result when there are unequivocal issues related to integrity, honesty, probity and patient safety. The ARCP board will recommend to the PGT Committee that the Radiology Trainee is dismissed from the postgraduate training programme in Radiology. The PGT committee will interview the trainee. If the decision to terminate training is accepted, the PGT committee shall inform the President of the Malta Association of Radiologists and Nuclear Medicine Physicians in writing/email within 7 working days from meeting the trainee. The letter should be cced to the trainee, Lead PGT coordinator, chief medical officer, chairperson of the Specialist Accreditation Committee, MDH Medical Imaging Department Chairperson, MDH Clinical Director and MDH Human Resources. A dismissed trainee has the right to appeal to the President of the Malta Association of Radiologists and Nuclear Medicine Physicians and has to do so in writing within 12 working days of receiving written/email notification of termination of training.

**Appeal process.** If the trainee appeals the decision to terminate training, the President of the Malta Association of Radiologists and Nuclear Medicine Physicians will elect an appeal committee that will consist of at least 2 MID consultants/specialists and 2 consultants/specialists from outside MID. The appeal committee shall interview the trainee within 1 month of election of such committee. The outcome of this interview will be given to the President of the Malta Association of Radiologists and to the trainee in writing/email within 1 week of interview. There can be one of two outcomes: (a) **Termination of training** without further right to appeal or (b) **Re-institution of training**. In the latter circumstance, the appeals committee must specify the reasons for reversing decision to terminate training and formulate a defined plan for the forthcoming trainee's training. The appeals committee will be responsible for the forthcoming trainee's ARCP.

## 8. Training years

It is understood that training in radiology consists of minimum of 5 training years. Progression from one year to the following is subject to ARCP. Certificate of Completion of training (CCT) is awarded after (a) Completion of 5 years of radiology training, having satisfied the yearly appraisal throughout the training period + (b) Graduating FRCR (or equivalent as approved by the Maltese Association of Radiologists) + (c) having spent one year abroad in a training centre that is recognized by the Postgraduate Training Committee for Radiology. All three criteria are necessary for award of CCT.

Trainees are known as basic specialist trainees (BSTs) upon commencement of training in radiology. **A BST will be eligible to a certificate of completion of basic specialist training and hence eligible to take up an HST post in radiology after successful completion of second year of training (i.e. Pass at 2<sup>nd</sup> year ARCP).**

The following is a summary of the training year competencies that will determine successful progression from one year of training to the next.

### **RADIOLOGY MODULES AND COMPETENCIES:**

#### **YEAR 1:**

- (a) Lecture modules:
1. Physics course (competency: attendance to 75% tutorials)
  2. Anatomy course (competency: attendance to 75% tutorials)
  3. Accident and Emergency Radiology (competency: attendance to 75% tutorials)
  4. Chest Radiology (competency: attendance to 75% tutorials)
  5. Introduction to ultrasound course (competency: attendance to 75% tutorials)
  5. MDT and discrepancy meetings (competency: attendance to at least 30 meetings in 1 calendar year)
- (b) Practice modules:
1. A/E plain film reporting (competency: i. evidence of number of x-rays reported and ii. A/E reporting test/assessment, i.e. >80% mark)
  2. Ultrasound (competency: i. evidence of number of ultrasounds observed/performed, ii. Pass in End of First Year Ultrasound Assessment)
  3. FRCR Part 1 exam (competency: Pass in FRCR part I physics and anatomy – both required)
  4. Audit (competency: Audit report signed by supervising consultant/resident specialist)
  5. Annual Review Competency Progression (competency: ARCP pass)

## YEAR 2:

- (a) Lecture modules: tutorials)
1. Genito-urinary radiology (competency: attendance to 75%)
  2. Hepatobiliary and Gastro-intestinal radiology (competency: attendance to 75% tutorials)
  3. Musculoskeletal radiology (competency: attendance to 75% tutorials)
  4. MDT and discrepancy meetings (competency: attendance to at least 30 meetings in 1 calendar year)
  5. Research module (competency: attendance to 75% tutorials)
- (b) Practice modules:
1. Plain film reporting (competency: i. evidence of reporting a minimum of 80 plain x-rays a week and ii. RAD-DOPS form for 1 reporting session)
  2. Ultrasound (competency: i. evidence of performing a minimum of 500 ultrasounds in one calendar year and ii. RAD-DOPS form for performing an ultrasound guided procedure e.g. FNA/aspiration/biopsy)
  3. CT (competency: CT reporting forms - minimum number = 200 and minimum average score of 3)
  4. MRI (competency: MRI reporting forms - minimum number = 50 and minimum average score of 3)
  5. HEAD CT reporting assessment (competency: assessment result >70%)
  6. Audit (competency: Audit report signed by supervising consultant/resident specialist)
  7. Annual Review Competency Progression (competency: ARCP pass)

### YEAR 3:

- (a) Lecture modules:
1. Neuroradiology (competency: attendance to 75% tutorials);
  2. Modular viva tutorials (competency: attendance to 75 tutorials);
  3. MDT and discrepancy meetings (competency: attendance of at least 30 meetings in 1 calendar year).
  4. International course/conference (competency: attendance certificate)
- (b) Practice modules:
1. Plain film reporting (competency: i. evidence of reporting a minimum of 80 plain x-rays a week and ii. RAD-DOPS form for 1 reporting session)
  2. Ultrasound (competency: i. evidence of performing a minimum of 500 ultrasounds in one calendar year and ii. RAD-DOPS form for performing an ultrasound guided procedure e.g. FNA/aspiration/biopsy)
  3. CT (competency: CT reporting forms - minimum number = 400 and minimum average score of 3)
  4. MRI (competency: MRI reporting forms - minimum number = 50 and minimum average score of 3)
  5. IR (competency: 2 RAD-DOPS forms for ultrasound guided artery/vein puncture; 2 RAD-DOPS forms for ultrasound/CT guided biopsy and 2 RAD-DOPS forms for ultrasound/CT guided drainage)
  6. Pass in FRCR IIA exam within two attempts.
  7. End of third year assessment (competency: Pass certificate)
  8. Audit (competency: Audit report signed by supervising consultant/resident specialist)
  9. Annual Review Competency Progression (competency: ARCP pass)

## YEAR 4

- (a) Lecture modules:
1. Tutorial attendance (competency: attendance to 75% tutorials);
  2. FRCR viva tutorial attendance (competency: attendance to 75% tutorials);
  3. MDT and discrepancy meetings (competency: attendance of at least 30 meetings in 1 calendar year).
  4. International course/conference (competency: attendance certificate)
- (b) Practice modules:
1. Plain film reporting (competency: i. evidence of reporting a minimum of 80 plain x-rays a week)
  2. Ultrasound (competency: i. evidence of performing a minimum of 500 ultrasounds in one calendar year and ii. RAD-DOPS form for performing at least 3 specialized ultrasound examinations e.g. breast/MSK/paediatric/vascular – these can be collected in 2<sup>nd</sup> or 3<sup>rd</sup> year depending on modular rotations)
  3. CT (competency: CT reporting forms - minimum number = 400 and minimum average score of 3)
  4. MRI (competency: MRI reporting forms - minimum number = 50 and minimum average score of 3)
  5. IR (competency: Three RAD-DOPS forms depending on subspecialty interest)
  6. FRCR IIA exam (competency: Pass)
  6. FRCR IIB exam (competency: Pass certificate)
  7. Audit (competency: Audit report signed by supervising consultant/resident specialist)
  8. Annual Review Competency Progression (competency: ARCP pass)

## **YEAR 5 (SUBSPECIALTY TRAINING ABROAD)**

(a) Lecture modules: 1. Attendance of lectures/conferences (competency: certificate)

(b) Practice modules:

1. Fellowship in subspecialty (competency: i. Education plan set up at start of subspecialty training; ii. Evidence of subspecialty training and progression in form of detailed logbook countersigned by educational supervisor; iii. Progress reports half way through and at end of fellowship training signed by education supervisor)
2. Annual Review Competency Progression (competency: ARCP pass)

## **RADIOLOGY ROTATIONS**

Years 1 to 3:

### **Core rotations:**

1. Gastrointestinal radiology - including fluoroscopy (Dr Kristian Micallef)
2. Chest radiology (Dr Adrian Mizzi)
3. Neuroradiology (Dr Reuben Grech)
4. Genitourinary radiology (Dr Warren Scicluna)
5. Musculoskeletal radiology (Dr Ruben Depasquale and Dr Sandro Galea Soler)
6. Vascular and interventional radiology (Dr Adrian Mizzi, Dr Kenneth Saliba, Prof Kevin Cassar)
7. Breast radiology (Dr Salvina Zrinzo and Dr Jessica Muscat)
8. Paediatric radiology (Dr Andre Stefan Gatt)

### **Optional Rotations:**

9. Nuclear Medicine (Dr Anthony Samuel and Dr Mark Anthony Aquilina)
10. Cardiac Imaging (Dr Luise Reichmuth and Dr Alex Borg)
11. Hepatobiliary radiology and interventional oncology (Dr Kelvin Cortis)
12. Oncology Rotation (Dr Melvin Danastasi)
13. ENT Rotation (DR Edith Vassallo)

[Every rotation has an assessment form attached to it.](#)

**References:**

1. MHEC CIRCULAR 26/2008 DH 158/08
2. RADIOLOGY TRAINING CURRICULUM Malta Radiology Training Programme MAY 2014
3. RCR SPECIALTY TRAINING CURRICULUM FOR CLINICAL RADIOLOGY May 2010 (Updated 31 December 2013)
4. Public Health Medicine Training Framework 2010
5. THE GP TRAINEE'S ANNUAL APPRAISAL Second update with addendum 13 February 2014