SECTION FOUR

ASSESSMENT AND
CLINICAL PERFORMANCE
4.1 Assessment as part of the learning process

The experiential model of the learning process together with the novice-to-expert model of clinical skill development explained in Section 2 helps us to understand that knowledge, skills and attitudes are in a continuous process of development. The model can assist us to appreciate why our expectations regarding a student’s ability to plan, implement and evaluate radiographic examinations need to be modified.

Another reason for the adoption of this model of learning is that it demonstrates how important feedback is to the quality of the learning outcome. If we want students to develop professionally and personally as a consequence of undertaking Clinical Studies, we need to be committed to providing them with purposeful and fair feedback about their clinical participation and performance. Continuous evaluation in the form of process feedback is an integral part of the teaching process; and is necessary from the initial overview to the final summary of an examination. To facilitate student progress along the continuum from novice to expert practitioner the effective provision of feedback is essential.

Formalised assessment can provide students with multi-level feedback. When conducted in an appropriate manner using a carefully constructed assessment tool, the process can diagnose areas of weakness and areas of strength as well as encourage and challenge students to excel in their approach to clinical practice. At the same time, if a student fails to meet the expected standard, the process should make it clear to the student why such a judgement was made. At no time should formalised assessment be seen as a disciplinary event. Rather, as with formative assessment, summative assessment should also be seen as an integral part of the learning process.

4.1.1 Why formally assess student performance and attitudes?

There are a number of reasons that formal clinical assessments occur. The university treats the clinical studies rotations very seriously. Student must demonstrate they are up to the expected standard. Formal assessment can act as a motivator to students who have been less than self-directed in the workplace. Formal assessments can also establish the strengths and weaknesses of the student’s practical skills and knowledge base and allow for a more accurate and personal learning plan to be developed for the remainder of the placement. Finally, assessments can provide insight into the quality of the clinical instruction and teaching provided by practitioners. You are strongly advised to read the publication Practical Guide for Clinical Educators provided to you as a PDF in the same location on our Home Page as you found these Guidelines.

4.1.2 Challenges and responsibilities associated with the role

There are many challenges associated with this role. From acting as a friend and colleague to the student, at the time of the specific assessment the practitioner is suddenly cast in the role of judge and jury. Being fair and “objective” is a key expectation of the role. It is crucial that you understand the criteria against which your judgements are to be made. As a professional there is an
The real challenge will come as you balance your own personal perspective of the student’s performance against the university’s assessment schema. For example, many clinical assessors recognise that performance in that one clinical examination may not tell the total picture. The student may have been satisfactory up until that point in time when the final decision has to be made. Nevertheless a summative judgement must be made irrespective of the situation. Again we strongly advise you to read the publication Practical Guide for Clinical Educators.

Please note: It is mandatory that ONLY the designated tutor/supervisor or their approved deputy complete the Clinical Skills assessments. Also, each assessment must be accompanied with comments. It is unacceptable to simply indicate a P level without justifying the decision.

4.1.3 Handling the role

You have to learn to handle the consequences of the judgement and know when to intervene to protect the patient. The best way to prepare for the role of assessor is to understand the process and the underlying philosophy of the assessment approach. For example, is the assessment approach a competency based system that focuses only upon observable behaviours? Therefore are you only required to comment and make a judgement about the actual performance?

Alternatively are you expected to ask the student to provide a rationale for their actions? If so ensure you have appropriate questions that can elicit this information. Are you prepared to handle the emotion surrounding assessment? Are you aware of the professional codes of behaviour and practice standards as these may well be incorporated into the specific assessment tool devised?

Finally, do you understand the scoring system we request you use for the determination of the performance grade?

At this stage review SECTION 2 of these Guidelines. Monash University draws upon the Novice to Expert Model of Clinical Skill Development to assess its students’ practical ability and their clinical decision-making capacities. We recognise the difficulties and challenges associated with the assessor role and ask you to carefully read the following sections as we attempt to clarify our assessment approach.

4.2 How to give meaningful feedback

4.2.1 Phases of feedback

All radiographers who supervise and teach students will need to provide feedback to them. There are three major phases of the provision of feedback and these include:

- asking for feedback;
• providing feedback; and
• receiving feedback.

For feedback to be a meaningful exchange between the student and the clinical supervisor there needs to be a give and take of information, feelings and perceptions. **We strongly advise you to read the publication Practical Guide for Clinical Educators provided as a PDF in the same location as these Guidelines on our Home page.**

### 4.2.2 Guidelines for the provision of feedback

• Before giving feedback make sure the student has had the opportunity to discuss their performance and feelings about it with you.

• Be clear, precise and specific. Direct the feedback to actual behaviour that has been observed.

• Give feedback on the students’ resources and strengths, as well as their limits and weaknesses.

• Give useful, appropriate feedback on behaviour that the student can change in a realistic time frame.

• Give descriptive or factual feedback based on first hand evidence.

• Be fair and honest, not judgemental – feedback should not focus on the others’ values, beliefs and personality traits.

• Immediate feedback is more meaningful and practical since the student can relate it to what has actually happened.

• Too much feedback at once should be avoided.

• Feedback should always be supportive and conducted in private, away from patients, staff and other students.

• Feedback should be focused; descriptive of the behaviour observed and detailed enough so that the student is able to determine what aspects of their performance they must change.

• Verify your perceptions, be flexible enough to change your perceptions and ascertain that the student understands your feedback.

• Highly effective teachers are good providers of “process feedback” (feedback with explanation).

### 4.3 Formalised assessment

The attainment of clinical competency is an important goal in the clinical program. However, students are beginning radiographers or sonographers. It is all too easy to forget how daunting the clinical environment can be for beginners. We therefore need to ensure that our expectation about student performance matches their level of clinical development.

The formalised assessment forms are organised in relation to what we refer to as:
4.4 Dimensions of professional practice

A professional practice possesses a number of features that are observable and assessable. We believe that all radiographic examinations possess the following professional dimensions:

- Pre-treatment Preparation & Patient Assessment;
- Procedural Technique and Clinical Problem-solving;
- Professional Communication;
- Image Interpretation and Evaluation; and
- Organisational and Legal Obligations.

Besides assisting the students to think about their professional development, these Dimensions of Radiographic Practice form the basis of the formal assessment of the student’s Radiographic Clinical Skills that you, as their clinical supervisor, conduct during the student’s clinical attachment. The Department of Medical Imaging and Radiation Sciences expects that at the end of each clinical rotation, students will have demonstrated progression along the continuum from novice or Beginner to either Intermediate Beginner, Advanced Beginner or Competent Radiographer in relation to these 5 Dimensions of Professional Practice:

Each formal clinical assessment is divided into the 5 sections thereby providing the assessor with the opportunity to make a judgement about student performance against each dimension of practice. At the same time the scheme acknowledges that the sum of the performance is greater than its individual parts and therefore the scheme allows the assessor to provide a holistic grade at the completion of the assessment.

N.B.: Examples of the Structure of the Clinical Assessment forms are provided in 4.8

4.5 Using the novice to expert model of clinical skill development to assess student performance

An explanation of this model and the characteristics behaviours for each level of development was provided in Section 2 of these Guidelines. The attractiveness of this model is that at the early stages of development students can still pass the assessment according to the criteria established for the level at which they are being assessed. In other words, the model recognises the development nature of clinical skill development and rewards students as they struggle to master the multi-faceted nature of practice. This means you will need to refer to the summary sheet provided in Section 2.4

Since 2010 new guidelines have been created in respect to the award of P grades in cases of repeat projections and the use of side markers. These have been incorporated within each clinical assessment proforma. As well, since 2010 the anatomical structures students are required to identify in general radiographic examinations are clearly specified in a special appendix placed at the back of each of the student clinical workbooks.
4.6 Performance grading for assessment: Policy Statement

At the same time as you assess the capacity of the student to realise the attributes expected of them at their stage of development, you will be required to grade the performance from a fail grade 0 or 1 or a Pass at either grade 2, 3 or 4. In determining the final overall grade for the examination, please take into account the following policy statement:

If a projection was repeated and it was outside of the control of the student it is possible for the student to achieve a pass grade of 2. If there was a single repeat due to student inattention then a Fail level 1 can be awarded. If there are two or more repeats due to student inattention a fail 0 must be awarded.

To assist you in the determination of the grade we have developed criteria that we ask you to use. In 4.6.1 below we provide the basic criteria to be applied to each developmental level i.e. Beginner, intermediate beginner, advanced beginner and competent student radiographer.

4.6.1 Beginner (B)

PASS LEVEL 4: [P4] Student exhibited the actions expected of a Beginner. Required virtually no prompting in respect to the implementation of this element of the examination. A satisfactory examination with no repeat exposures required.

PASS LEVEL 3: [P3] Student exhibited the characteristics expected of a Beginner. Minor prompting was required in respect to this element of the examination. On balance a satisfactory examination with no repeat exposures.

PASS LEVEL 2: [P2] Student exhibited most of the characteristics expected of a Beginner. However prompting on the part of the assessor was required in this element of the examination to prevent a repeat exposure. The student did however remain in control of the examination. On balance given the level of experience, a satisfactory performance.

FAIL LEVEL 1: [F1] Student exhibited some of the characteristics expected of a Beginner. However, in respect to this element of the examination the clinical supervisor had to intervene and participate in the examination to prevent the patient from having a repeat exposure.

FAIL LEVEL 0 [0] Either the student demonstrated significant areas of weakness with respect to their knowledge and understanding of this Dimension or the student was totally dependent upon the assessor for direction or in the interests of patient safety the assessor had to assume control of the examination.
4.6.2 Intermediate Beginner (IB)

PASS LEVEL 4: [P4]  Student exhibited the actions expected of an Intermediate Beginner. Required virtually no prompting in respect to the implementation of this element of the examination. A satisfactory examination with no repeat exposures required.

PASS LEVEL 3: [P3]  Student exhibited the characteristics expected of an Intermediate Beginner. Minor prompting was required in respect to this element of the examination. On balance a satisfactory examination with no repeat exposures.

PASS LEVEL 2: [P2]  Student exhibited most of the characteristics expected of an Intermediate Beginner. However prompting on the part of the assessor was required in this element of the examination to prevent a repeat exposure. The student did however remain in control of the examination. On balance given the level of experience, a satisfactory performance.

FAIL LEVEL 1: [F1]  Student exhibited some of the characteristics expected of an Intermediate Beginner. However, in respect to this element of the examination, the assessor had to intervene and participate in the examination to prevent the patient from having a repeat exposure.

FAIL LEVEL 0 [0]  Either the student demonstrated significant areas of weakness with respect to their knowledge and understanding of this Dimension or the student was totally dependent upon the assessor for direction or in the interests of patient safety the assessor had to assume control of the examination.

4.6.3 Advanced Beginner (AB)

PASS LEVEL 4: [P4]  Student exhibited the actions expected of an Advanced Beginner. Required virtually no prompting in respect to the implementation of this element of the examination. A satisfactory examination with no repeat exposures required.

PASS LEVEL 3: [P3]  Student exhibited the characteristics expected of an Advanced Beginner. Minor prompting was required in respect to this element of the examination. On balance a satisfactory examination & no repeats.

PASS LEVEL 2: [P2]  Student exhibited most of the characteristics expected of an Advanced Beginner. However prompting on the part of the assessor was required in this element of the examination to prevent a repeat exposure. The student did however remain in control of the examination. On balance given the level of experience, a satisfactory performance.

FAIL LEVEL 1: [F1]  Student exhibited some of the characteristics expected of an Advanced Beginner. However, in respect to this element of the examination the assessor had to intervene and participate in the examination to prevent the patient from having a repeat exposure.

FAIL LEVEL 0 [0]  Either the student demonstrated significant areas of weakness with respect to their knowledge and understanding of this Dimension or the student was totally dependent upon the assessor for direction or in the interests of patient safety the assessor had to assume control of the examination.
4.6.3 Competent (C)

PASS LEVEL 4: [P4]  Student exhibited the actions expected of a competent student radiographer. Required virtually no prompting in respect to the implementation of this element of the examination. A satisfactory examination with no repeat exposures required.

PASS LEVEL 3: [P3]  Student exhibited the characteristics expected of a competent student radiographer. Minor prompting was required in respect to this element of the examination. On balance a satisfactory examination with no repeat exposures.

PASS LEVEL 2: [P2]  Student exhibited most of the characteristics expected of a competent student radiographer. However prompting on the part of the assessor was required in this element of the examination to prevent a repeat exposure. The student did however remain in control of the examination. On balance given the level of experience, a satisfactory performance.

FAIL LEVEL 1: [F1]  Student exhibited some of the characteristics expected of a competent student radiographer. However, in respect to this element of the examination the assessor had to intervene and participate in the examination to prevent the patient from having a repeat exposure.

FAIL LEVEL 0 [0]  Either the student demonstrated significant areas of weakness with respect to their knowledge and understanding of this Dimension or the student was totally dependent upon the assessor for direction or in the interests of patient safety the assessor had to assume control of the examination.

4.7 Action in case of a fail grade

If a student fails an assessment their performance will be treated in the same way as it would had the examination been conducted on campus. Upon their return to the university their performance in this unit will be recorded and submitted for consideration by the Examination Board. Depending upon their results in other units, they will be given an opportunity to undertake supplementary assessment in regards to their Radiographic Clinical Skills at a time to be determined by the university.
# 4.8 Examples of Clinical Assessment Forms

**YEAR ONE:** Initial Radiographic clinical skills Assessment (Beginner level - hurdle)

Please circle which examination was undertaken one of:

1. **Hand** (a PA and PA oblique +/- lateral according to patient requirement),
2. **Finger** (a PA, PA Oblique and Lateral)
3. **Foot** (PA, PA oblique)
4. **Forefoot/toes** (PA, PA Oblique with lateral if toes require this)

Please note: If the student does not implement the authorised approach to the identification of the patient the student automatically FAILS the assessment.

**If a projection was repeated and it was outside of the control of the student it is possible for the student to pass the examination however you cannot award a grade higher than 2**

## Practical Skills

<table>
<thead>
<tr>
<th>Practical Skill</th>
<th>Pass</th>
<th>Fail</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the student correctly evaluate the radiographic request form?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Did the student correctly identify, prepare &amp; communicate with the patient?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Did the student correctly implement the departmental protocol for radiographic technique of this area i.e. exposure selection/SID/collimation side markers etc.?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Did the student correctly instruct &amp; position the patient for the radiographic projections?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Was the correct centring point selected by the student?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Did the student correctly evaluate the radiographic request form?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Did the student correctly process the image in your PACS system?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Did the student to discharge the patient appropriately after completion of the examination?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Did the student correctly forward the images for reporting in your PACS system?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Learning outcomes – the student will add these and base the outcomes on your verbal feedback

Date: ___________________________  Student Signature:
Radiographic clinical skills assessment Semester 1 – Intermediate beginner level

Examination of the wrist (+/- scaphoid views), elbow, ankle  PLEASE CIRCLE WHICH EXAMINATION WAS UNDERTAKEN

ONE OF:
1. **Wrist** (a PA, lateral and PA oblique should be performed with further protocol driven scaphoid projections added if required),

2. **Elbow** (AP and lateral projections are required with any further views according to clinical and protocol needs)

3. **Ankle** (AP, Mortise (AP oblique) and Lateral)

PLEASE NOTE: If the student does not implement the authorised approach to the identification of the patient the student automatically FAILS the assessment. IF A PROJECTION WAS REPEATED AND IT WAS OUTSIDE OF THE CONTROL OF THE STUDENT IT IS POSSIBLE FOR THE STUDENT TO PASS THE EXAMINATION HOWEVER YOU CANNOT AWARD A GRADE HIGHER THAN 2

### 1. Evaluation of the request form and preliminary patient preparation.

**How well did the student:**

<table>
<thead>
<tr>
<th><strong>PASS</strong></th>
<th><strong>FAIL</strong></th>
</tr>
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<tbody>
<tr>
<td>4</td>
<td>1</td>
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<tr>
<td>3</td>
<td>2</td>
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<tr>
<td>2</td>
<td>1</td>
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<tr>
<td>1</td>
<td>0</td>
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</table>

Understand the clinical history on the request form and relate this information to the selection of the radiographic projection, image processing, speed selection and exposure technique

Identify the patient, explain the examination to the patient and prepare the patient for the examination?

<table>
<thead>
<tr>
<th><strong>PASS</strong></th>
<th><strong>FAIL</strong></th>
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<tbody>
<tr>
<td>4</td>
<td>1</td>
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<tr>
<td>3</td>
<td>2</td>
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<tr>
<td>2</td>
<td>1</td>
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<tr>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Essentially in determining your grade and formulating your comments, ask yourself the following questions:

- Did the student understand the clinical history and relate this information to the selection of the radiographic projections, imaging system (where appropriate) and exposure technique?
- Were any deficiencies in the clinical notes recognised and if so what action did the student take before proceeding with the examination?
- What use was made of previous images or departmental protocols in the planning phase of the examination?
- Evaluate the performance of the student in gaining patient consent for the examination, explaining the examination to the patient and preparing the patient for the examination.

### 2. Selection and use of an appropriate radiographic technique:

**How well did the student:**

FAILURE TO USE SIDE MARKERS & IN AN APPROPRIATE MANNER AUTOMATICALLY MEANS THE HIGHEST LEVEL OF ACHIEVEMENT IS 2

<table>
<thead>
<tr>
<th><strong>PASS</strong></th>
<th><strong>FAIL</strong></th>
</tr>
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<tbody>
<tr>
<td>4</td>
<td>1</td>
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<td>2</td>
<td>1</td>
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<tr>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Implement and sequence the radiographic projections?

Select an appropriate exposure technique?

Position the patient for the projection, align the CR and collimate the beam?

Use side markers, immobilisation, radiation protection and implement infection control?

Process the images according to protocol?

In determining your grade and formulating your comments, ask yourself how well the student

- implemented and sequenced the radiographic projections;
- utilized the imaging system;
- selected an appropriate exposure techniques and provided a justification for the decision;
- positioned the patient for the projections, aligned the CR and collimated the x-ray beam;
- apply immobilisation, radiation protection and infection control;
- processed/post-processed the resultant image/s.
### 3. Care of the patient throughout the examination:

<table>
<thead>
<tr>
<th>How well did the student;</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend to the patient’s needs clinically and culturally?</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
<tr>
<td>Provide the patient with adequate explanation and instructions?</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
<tr>
<td>Handle and touch the patient being cognisant of the patient’s cultural background?</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
<tr>
<td>Appropriately discharge the patient after the examination?</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
</tbody>
</table>

### 4. Evaluation of the radiograph:

<table>
<thead>
<tr>
<th>How well did the student;</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess the radiographic image in terms of quality and radiographic positioning paying attention to the exposure index or equivalent of your system?</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
<tr>
<td>Identify unacceptable images and suggest measures to correct the problem? If images are all acceptable question the student about appearances that would indicate the image is unacceptable and warrants a repeat – award marks according to answer.</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
<tr>
<td>Identify the radiographic anatomical structures as indicated in the checklist in Appendix One in this Workbook?</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
<tr>
<td>Indicate any abnormal areas and attempt to provide a diagnostic label? If no abnormality seen ask student for appearances that would suggest a problem is evident and mark accordingly.</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
</tbody>
</table>

### 5. Organisational and legal obligations

<table>
<thead>
<tr>
<th>Did the student:</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross check the images in terms of patient identification, previous images and side markers?</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
<tr>
<td>Correctly prepare and send the mages for reporting?</td>
<td>4 3 2 1 0</td>
<td></td>
</tr>
</tbody>
</table>

### 6. Final Assessment

In determining the final overall grade for the examination, please take into account the following policy statement: If a projection was repeated and it was outside of the control of the student it is possible for the student to achieve a pass grade of 2. If there was a single repeat due to student inattention then a Fail level 1 can be awarded. If there are two or more repeats due to student inattention a fail 0 must be awarded.

<table>
<thead>
<tr>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 3 2 1 0</td>
<td></td>
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</tbody>
</table>

**Student strengths**

**Student areas for improvement**

___________________________________________________________________________

**Date** | **Assessor Signature.** | **Student Signature.**
YEAR TWO Radiographic clinical skills assessment 1: (Advanced Beginner)

PLEASE CIRCLE WHICH EXAMINATION WAS UNDERTAKEN

ONE OF:

- **Knee examination** (an AP/PA, lateral and either an intercondylar fossa view or a patella view or all 4 projections or AP + Lateral + both obliques),
- **Thoracic spine** (AP; lateral & ideally a coned view for cervico-thoracic junction or thoraco-lumbar junction)
- **Lumbar spine** (AP, coned AP L5/S1; lateral; coned lateral L5/S1 and ideally both oblique projections)
- **Cervical spine** (a separate C1 – C2 projection; AP 3-7; a lateral C1 –C7, ideally both oblique projections and, if necessary a cervico - thoracic junction)
- **Shoulder girdle and humerus** (Either 3 projections for the joint or 2 projections for the entire humerus)

PLEASE NOTE: If the student does not implement the authorised approach to the identification of the patient the student automatically FAILS the assessment.

IF A PROJECTION WAS REPEATED AND IT WAS OUTSIDE OF THE CONTROL OF THE STUDENT IT IS POSSIBLE FOR THE STUDENT TO PASS THE EXAMINATION. HOWEVER A PASS GRADE 2 IS THE HIGHEST THAT CAN BE GIVEN. IF THERE ARE TWO OR MORE REPEATS A FAIL MUST BE AWARDED.

<table>
<thead>
<tr>
<th>1. Evaluation of the request form and preliminary patient preparation. How well did the student;</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand the clinical history on the request form and relate this information to the selection of the radiographic projection, image processing, speed selection and exposure technique</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Identify the patient, explain the examination to the patient and prepare the patient for the examination?</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Essentially in determining your grade and formulating your comments, ask yourself the following questions:

- Did the student understand the clinical history and relate this information to the selection of the radiographic projections, imaging system (where appropriate) and exposure technique?
- Were any deficiencies in the clinical notes recognised and if so what action did the student take before proceeding with the examination?
- What use was made of previous images or departmental protocols in the planning phase of the examination?
- Evaluate the performance of the student in gaining patient consent for the examination, explaining the examination to the patient and preparing the patient for the examination.

Comments:
### 2. Selection and use of an appropriate radiographic technique:

<table>
<thead>
<tr>
<th>Task</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement and sequence the radiographic projections?</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Select an appropriate exposure technique?</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Position the patient for the projection, align the CR and collimate the beam?</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Use side markers, immobilisation, radiation protection and implement infection control?</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Process the images according to protocol?</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

In determining your grade and formulating your comments, ask yourself how well the student:

- implemented and sequenced the radiographic projections;
- utilized the imaging system;
- selected an appropriate exposure techniques and provided a justification for the decision;
- positioned the patient for the projections, aligned the CR and collimated the x-ray beam;
- apply immobilisation, radiation protection and infection control;
- processed/post-processed the resultant image/s.

**Comments:**

### 3. Care of the patient throughout the examination:

<table>
<thead>
<tr>
<th>Task</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend to the patient’s needs clinically and culturally?</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Provide the patient with adequate explanation and instructions?</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Handle and touch the patient being cognisant of the patient’s cultural background?</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Appropriately discharge the patient after the examination?</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

### 4. Evaluation of the radiograph: How well did the student:

<table>
<thead>
<tr>
<th>Task</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess the radiographic image in terms of quality and radiographic positioning paying attention to the exposure index or equivalent of your system?</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Identify unacceptable images and suggest measures to correct the problem?</td>
<td>4</td>
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</tr>
<tr>
<td>Identify the radiographic anatomical structures as indicated in the checklist in <em>Appendix One in this Workbook</em>?</td>
<td>4</td>
<td>3</td>
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</tbody>
</table>
Indicate any abnormal areas and attempt to provide a diagnostic label?  

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<tbody>
<tr>
<td>5. Organisational and legal obligations Did the student:</td>
<td>PASS</td>
<td>FAIL</td>
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</table>

Cross check the images in terms of patient identification, previous images and side markers?  

|   | 4 | 3 | 2 | 1 | 0 |

Correctly prepare and send the mages for reporting?  

|   | 4 | 3 | 2 | 1 | 0 |

6. Final Assessment
In determining the final overall grade for the examination, please take into account the following policy statement: If a projection was repeated and it was outside of the control of the student it is possible for the student to achieve a pass grade of 2. If there were two or more repeats a fail must be awarded.

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Student strengths
___________________________________________________________________________________
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Student areas for improvement
___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________

| Date | Assessor Signature. | Student Signature. |
**Year 2 & 3 Assessment of Mobile image intensifier examination in theatre**

**Student Name:**

**Operative procedure & Clinical notes**

**Role of the Radiographer:**

1. **Pre-examination preparation and patient assessment**
   - Interpretation and evaluation of the request form.
   - Assessment of previous radiographs or images/reports (where applicable).
   - Use of the mobile image intensifier.
   - Communication with operating theatre staff.
   - Gaining further clinical information if required (e.g. pregnancy check, infection status).
   - Confirming patient identification.
   - Infection control and maintenance of sterile field.
   - Radiation protection (use of radiation hazard signs, protection of operating theatre staff).

*Evaluate the ability of the student to understand the clinical history and relate this information to the surgical procedure being performed and the projections required using the image intensifier.*

*What use was made of previous images in the planning phase of the examination?*

*Evaluate the effectiveness of the communication between the operating theatre staff and the student.*

*Was the student able to use the image intensifier and correctly position it relative to the patient and operating table?*

*What precautions did the student take to ensure that the sterile field was maintained?*

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</table>

2. **Procedural technique and clinical problem-solving**

Evaluate the ability of the student in relation to the following:

- Patient positioning (if applicable, e.g. cannulated screw for # NOF).
- Radiographic technique: fluoroscopic exposure factors/ subject to image distance/ collimation (use and manipulation of)/ centring and use of dose reduction modes.
- Appropriate orientation of C-arm.
- Effective manipulation of C-arm (height, rotation, angulation).
- Maintenance of sterile field.
- Radiation protection – patient, operating theatre staff and the student.
- Removal of image intensifier after the procedure.

*Assessment (please circle level of pass or fail)*

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</table>
3. **Professional communication**

Assess the communication skills of the student during the examination in relation to the following:

- Interaction with surgeon: anticipation/technique (e.g. centring)/duration of fluoroscopy.
- Placement of image intensifier and monitor.
- Maintenance of sterile field.
- Radiation protection.

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</table>

4. **Image interpretation and evaluation**

Evaluate the ability of the student:

- To interpret the images in terms of radiographic quality and positioning.
- To identify unacceptable images and suggest measures to correct the problem/s.
- To describe the radiographic anatomy and, where relevant, any radiographic pathology as per the anatomy list in **Appendix One in the Workbook**.

<table>
<thead>
<tr>
<th>PASS</th>
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</tbody>
</table>

5. **Organisational and legal obligations**

- Evaluate the ability of the student to ensure any hard copy images include patient identification and side markers.
- Evaluate the ability of the student in recording fluoroscopic time and dose, if relevant.
- Evaluate the ability of the student to prepare any hard copy images for reporting.

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**Final assessment grade**

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</table>

**Student strengths**

**Student areas for improvement**

| Date | Assessor Signature. | Student Signature. |
Mobile radiographic examination assessment form (used in years 2 and 3)

Student Name: ____________________________________________

Radiographic examination: __________________________________

Hospital ward: ____________________________________________

Condition of patient: _______________________________________

Projections taken: __________________________________________

Did the student positively identify the patient?  YES    NO

NB FAILURE TO DO MEANS AN AUTOMATIC FAILURE FOR THIS ASSESSMENT

1. Pre-examination planning and patient assessment
   • Interpretation and evaluation of the request form.
   • Assessment of previous radiographs/reports (where applicable).
   • Use of the mobile x-ray machine.
   • Communication with ward staff.
   • Gaining further clinical information if required (for example, pregnancy check, infection status).
   • Patient welcome and identification.
   • Infection control.
   • Patient consent.
   • Explanation of the examination.
   • Preparing the patient for the examination.

Evaluate the ability of the student to understand the clinical history and relate this information to the selection of a radiographic technique.

Were any deficiencies in the clinical notes recognised and if so what action did the student take before proceeding with the examination?

What use was made of previous images in the planning phase of the examination?

   Evaluate the effectiveness of the communication between the ward staff and the student.

   • Was the student able to use the x-ray machine and correctly position it relative to the patient’s bed?
   • What precautions did the student take to ensure that infection risk to the patient was minimised?
   • Evaluate the performance of the student in gaining patient consent for the examination, explaining the examination to the patient and preparing the patient for the examination.

Assessment (please circle level of pass or fail)

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</tbody>
</table>
2. **Procedural technique and clinical problem-solving**

Evaluate the ability of the student in relation to the following:
- Radiographic technique: exposure factors/ FFD/SID / collimation
- Patient positioning (taking account of the status of the patient).
- Central ray (CR).
- Steps taken to prevent a lordotic view of the chest (if a chest examination).
- Patient immobilisation.
- Use of side markers.
- Radiation protection – patient, other staff and the student.
- Removal of mobile machine after the examination.

**Assessment (please circle level of pass or fail)**

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3. **Professional communication**

Assess the communication skills of the student during the examination and afterwards in relation to the following:
- The patient’s needs and right to privacy throughout the examination.
- Explanation and instructions to the patient.
- Patient handling/touching.
- Patient aftercare.

**Assessment (please circle level of pass or fail)**

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4. **Image interpretation and evaluation**

Evaluate the ability of the student:
- To interpret the radiograph images/s in terms of radiographic quality and radiographic positioning.
- To identify an unacceptable radiograph or image and suggest measures to correct the problem/s.
- To describe the radiographic anatomy and, where relevant, any radiographic pathology.

**Assessment (please circle level of pass or fail)**

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</table>
5. **Organisational and legal obligations**

Evaluate the ability of the student to cross check the radiograph in terms of patient identification, previous films/images and side markers. Evaluate the ability of the student to prepare the radiograph/image for reporting.

**Assessment (please circle level of pass or fail)**

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6. **Final assessment grade**

If a projection was repeated and it was outside of the control of the student it is possible for the student to achieve a pass grade of 2. If the error was due to student inattention to detail a Fail grade must be awarded.

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**Student strengths**

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___________________________________________________________________________________

**Student areas for improvement**

___________________________________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

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<th>Date</th>
<th>Assessor Signature.</th>
<th>Student Signature.</th>
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</table>
YEAR THREE CT clinical skills assessment

To be performed by CT Supervisor or approved deputy.

Assessment 1: CT examination of the brain (Advanced Beginner)

Clinical notes: __________________________________________________________

Did the student positively identify the patient? YES NO

NB FAILURE TO DO MEANS AN AUTOMATIC FAILURE FOR THIS ASSESSMENT

1. Pre-examination planning and patient assessment

- Interpretation and evaluation of the request form in terms of clinical history and the selection of the CT procedural technique.
- Assessment of previous radiographs and scans/reports (where applicable).
- Patient welcome and identification.
- Gaining further clinical information if required (for example, pregnancy check/history of allergy/clinical history).
- Patient consent and explanation of the examination.
- Preparing the patient for the examination.
- Preparation and administration of medium (if applicable) contrast.

Did the student understand the clinical history?

Were any deficiencies in the clinical notes recognised and if so what action did the student take before proceeding with the examination?

What use was made of previous imaging or departmental protocols in the planning phase of the examination?

Evaluate the performance of the student in gaining patient consent, explaining the examination to the patient and preparing the patient for the examination.

Assessment (please circle level of pass or fail)

<table>
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</table>

Comments: __________________________________________________________

Note: The student must be adequate in all aspects to pass section 2 (below). If the student fails section 2 it will result in an OVERALL FAIL for this examination.
2. **Procedural implementation**

- Positioning of patient in the gantry.

  - [ ] Satisfactory
  - [ ] Unsatisfactory

- Selection of correct CT protocol.

  - [ ] Satisfactory
  - [ ] Unsatisfactory

- Demonstrate an understanding of the scanning parameters and their relationship to the clinical examination: algorithm/ FOV/ slice thickness/ table increment/pitch/ scan range.

  - [ ] Satisfactory
  - [ ] Unsatisfactory

- Ability to perform the scan: scout/ planning of scan/ image acquisition and timing in relation to the delivery of contrast/ assistance with delivery of contrast where necessary.

  - [ ] Satisfactory
  - [ ] Unsatisfactory

**Overall Assessment for this element of the procedure (please circle level of pass or fail)**

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</table>

**Comments:** *(If student has been deemed inadequate in any aspect of this please justify your decision.)*

3. **Professional communication**

Assess the communication skills of the student during the examination and afterwards in relation to the following:

- The patient’s needs and right to privacy throughout the examination.
- Explanation and instructions to the patient.
- Patient handling/touching.
- Patient aftercare and discharge.
- Professional communication with medical and nursing staff.
Assessment (please circle level of pass or fail)

<table>
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</table>

4. Image interpretation and evaluation
To what extent could the student:
- Determine whether images have included all relevant anatomy.
- Evaluate whether the appropriate algorithm(s) have been employed to reconstruct the images.
- Create hardcopies of images using appropriate window level and width settings.
- Recognise normal anatomical structures: sinuses, orbits, optical nerves, lobes of brain, cerebellum, tentorium, pons, ventricles, pineal gland, choroid plexus, internal/external capsule, thalamus, caudate nucleus, major fissures & sulci.
- Recognise abnormal anatomy.
- Describe pathology, if present in addition to the basic appearances that may be present in the hypothetical cases of tumour, infarct, oedema and haemorrhage (subdural, extradural, subarachnoid and intracerebral).

Assessment (please circle level of pass or fail)

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</table>

5. Organisational and legal obligations
To what extent could the student:
- Cross check the images in terms of patient identification, and side annotation.
- Prepare the images for reporting.
- Archive the images.

Assessment (please circle level of pass or fail)

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6. Final assessment grade (using Advanced Beginner criteria)

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<th>PASS</th>
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Date | Assessor Signature. | Student Signature.
YEAR FOUR End of Placement Examination of General Radiographic Skills

Instructions:

1. This assessment must take place between weeks 18 and 24 depending upon student rotations within the department and whether they are in CT or MRI.

2. Students must ask their designated supervisor to assess their general radiographic abilities across a range of typical examinations that present over a concentrated period of 3 hours either morning or afternoon during the working week.

3. The supervisor must list the examinations he or she observed and write them down within the assessment proforma.

4. The examinations must be different from those selected for the mid – cycle examination.

5. The patients themselves must be from a range of cultural backgrounds, ages and present with a range of clinical conditions.

6. The assessor must complete the proforma based upon their observations across the range of examinations they have observed the student perform.

7. There is no grade for this assessment. Instead the supervisor needs to determine the student position on the novice to expert continuum.

8. If the assessor is of the view based upon the criteria provided within the assessment proforma the student has not reached either the advanced beginner or competent stage of development a fail must be indicated in the final assessment box.

The characteristics of the advanced beginner and competent radiographer are provided on page 37 of the PCP workbook given to the students for reference during the formal assessment process.

End of Placement Examination of General Radiographic Skills

Name of supervisor performing the examination

_____________________________________________________________________

Assessor to list the examinations performed by the student and the condition of the patient

<table>
<thead>
<tr>
<th>Radiographic Examinations</th>
<th>Patient condition, age, cultural background</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
1. Evaluation of request forms and preliminary patient preparation. How well did the student;

| Understand the clinical history on the request forms and relate this information to the selection of the radiographic projection, image processing, speed selection and exposure technique | Advanced Beginner (please tick) | Competent (please tick) |
| Identify patients, explain the examination to patients and prepare patients for the examinations? | | |

**In arriving at your determination ask yourself how well the student**

Did the student understand the clinical history and relate this information to the selection of the radiographic projections, imaging system (where appropriate) and exposure technique?

Were any deficiencies in the clinical notes recognised and if so what action did the student take before proceeding with the examination?

What use was made of previous images or departmental protocols in the planning phase of the examination?

Evaluate the performance of the student in gaining patient consent for the examination, explaining the examination to the patient and preparing the patient for the examination.

2. Selection and use of an appropriate radiographic technique:

| Implement and sequence the radiographic projections? | Advanced Beginner (please tick) | Competent (please tick) |
| Select an appropriate exposure technique? | | |
| Position the patient for the projection, align the CR and collimate the beam? | | |
| Use side markers, immobilisation, radiation protection and implement infection control? | | |
| Process the images according to protocol? | | |

**In arriving at your determination ask yourself how well the student**

- implemented and sequenced the radiographic projections;
- utilized the imaging system/s;
- selected an appropriate exposure techniques and provided a justification for the decision;
• positioned the patient for the projections, aligned the CR and collimated the x-ray beam;
• apply immobilisation, radiation protection and infection control;
• processed/post-processed the resultant image/s.

3. Care of the patient throughout the examinations:
   How well did the student

<table>
<thead>
<tr>
<th>Advanced Beginner</th>
<th>Competent</th>
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</thead>
<tbody>
<tr>
<td>Attend to patient’s needs clinically and culturally?</td>
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<tr>
<td>Provide patients with adequate explanations and instructions?</td>
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<tr>
<td>Handle and touch patients being cognisant of the patient’s cultural background?</td>
<td></td>
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<tr>
<td>Appropriately discharge patients?</td>
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</tbody>
</table>

4. Evaluation of the radiographs:
   How well did the student:

<table>
<thead>
<tr>
<th>Advanced Beginner</th>
<th>Competent</th>
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</thead>
<tbody>
<tr>
<td>Assess the radiographic image in terms of quality and radiographic positioning paying attention to the exposure index or equivalent of your system?</td>
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</tr>
<tr>
<td>Identify unacceptable images and suggest measures to correct the problem?</td>
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</tr>
<tr>
<td>Identify the radiographic anatomical structures you expect at this level of experience?</td>
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<tr>
<td>Indicate any abnormal areas and attempt to name the condition/s?</td>
<td></td>
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</table>

5. Organisational and legal obligations
   To what extent did the student:

<table>
<thead>
<tr>
<th>Advanced Beginner</th>
<th>Competent</th>
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<tbody>
<tr>
<td>Cross check the images in terms of patient identification, previous images and side markers?</td>
<td></td>
</tr>
<tr>
<td>Correctly prepare and send the mages for reporting?</td>
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</tbody>
</table>

6. Final Assessment
   On the basis of the overall performance of the student, please circle if the student has met the overall criteria to safely perform these examinations at the defined level of competency

<table>
<thead>
<tr>
<th>Fail</th>
<th>Advanced Beginner</th>
<th>Competent</th>
</tr>
</thead>
</table>

Student strengths (assessor to complete)


Student areas for improvement (assessor to complete)


Date | Assessor Signature. | Student Signature.
EXAMPLE OF A YEAR TWO PROFESSIONAL DEVELOPMENT PROJECT

Clinical decision making case reports

You are required to write 2 separate reports about 2 general radiography examinations that will allow you to fulfil the reporting requirements below. This means you need to select cases with a high probability of pathology.

One case needs to be a **trauma case** involving extremities and the other can be any other radiographic examination e.g. a chest examination or a lumbar spine etc. The cases selected must be ones in which you have had significant input in terms of patient care and radiographic positioning. The format for these case studies is provided below.

In the Competency Based Standards for Radiography (Egan, 1992), the Australian Institute of Radiography has confirmed that in emergency situations/urgent conditions, sole radiographer situations or in the absence of a radiologist, a radiographer may report a “professional opinion of medically significant findings to the medical personnel responsible for the patient’s treatment when considered necessary or requested” (p.84). Therefore, in contrast to the usual reports you have been writing up, these case studies should provide you with an opportunity to further improve your professional communication skills and radiographic interpretational skills.

For each case report include the following:

1. **CLINICAL PROBLEM:** A full description of the clinical problem as provided on the request form including completion of a *Clinical History Template Form* for each patient (they follow this section)

   Outline the **medical terminology** on the form. You may need to do further reading about the condition or ask for assistance. Include a definition of the patient’s clinical condition suspected by the referring doctor.

2. **THE PATIENT’S ACCOUNT OF THEIR PROBLEM.** Carlton (1996) believes that radiographers have a duty to collect a focussed history specific to the examination being performed. Please refer to your *Year 1 Professional Skills’ Workbook* for guidance about how to approach a patient and, in a professional manner, gather additional information. You must never be intrusive with your questions. Remember patients have the right to privacy and respect. Also as you learned last year, this information may not necessarily come via a face to face discussion with the patient. For example, you may find that the patient uses the positioning part of the radiographic examination as an opportunity to give you precise details about the location and intensity of the pain. For example, Carlton (1996) suggests that providing a radiologist with a clinical history acquired through gentle palpation of the ribs will greatly assist in the identification of a hairline fracture. The process of exploring the nature of the patient’s problem e.g. localisation of the pain, its duration in days or months and severity will also assist you in responding to item 4 below.
3. List the RADIOGRAPHIC PROJECTIONS taken and TECHNICAL FACTORS used. Where relevant, provide notes on any modifications to the routine positioning sequence together with any supplementary projections.

4. YOUR INTERIM DIAGNOSIS: While the radiographs are being processed and based on your assessment, write down what you expect to see on the radiographs e.g. a Colles’ fracture or arthritis. There may not be pathology although ideally you will have chosen a case with a high expectation of pathology. Include your interim findings in the report.

5. ABC ASSESSMENT: Following the discharge of the patient you need to write a short descriptive account of what the radiographs have shown. In first year you were provided with a method of assessing radiographs. Review the general principles provided in the recommended text “Manual of Radiographic Interpretation for General Practitioners” (see p.29 and pp.86-87). The following system of radiographic assessment suggested by the authors of the recommended text, ABC of Emergency Radiology should be followed in your descriptive radiographic account.

**ABCs System of Radiological Assessment for Injury/Disease to Bones and Joints**

**Adequacy:** (e.g. do the projections show the joint above and below the fracture).

**Alignment:** (e.g. anterior or posterior displacement, medial or lateral displacement).

**Bones:** (e.g. increase or decrease in density; periosteal reaction; cortical thickening; alteration in trabecular pattern, alteration in the shape of a bone).

**Cartilage and Joints:** (e.g. joint space narrowing, alteration in the shape of a joint).

**Soft tissues:** (e.g. is their evidence of soft tissue swelling).

**ABCs System of Radiological Assessment for the Chest**

Projection and exposure
Posture
Rotation
Degree of inspiration
Male or female
Mediastinum – trachea and the heart
Hila
Diaphragm
The radiolucency of both lungs
The bony thorax
Extrathoracic soft tissues

**A System of Radiological Assessment for the Abdomen**

Psoas shadow
Renal outline
Intestinal gas pattern
Calculi
Bones and joints

6. RADIOLOGIST’S REPORT: When you have written your radiographic appraisal of the examination you must follow up the case and read the radiologist’s report comparing the expert opinion with your own. Where practicable, seek permission to obtain a copy of this report for inclusion with your case study (ensure patient details are removed).

Include any information you are able to obtain on the patient’s management and treatment and follow-up.

7. CONCLUDE each case report with your personal thoughts about the examination. Did the requirement to analyse the images from the perspective of providing an opinion to a medical practitioner affect the quality of the radiographs you produced? What did you learn from the experience of comparing your account with the expert report? What effect did the process of talking with the patient about their problem have upon the quality of your work?

**Suggested Reading for Clinical Decision Making Reports**


**References**

Carlton, R R. The golden opportunity: translating personal interaction skills into high stake professional roles. Paper to the International Society of Radiographers and Radiologic Technologists 10th International Teacher’s Seminar, University of Nottingham, 1996.


1. **Area and type of symptoms**

   **ROI:** .................................................................

   (Please also indicate on lung chart)

   - **Symptoms:**
     - □ Cough
     - □ Bleeding
     - □ Sputum/discharge
     - □ Infection/inflammation
     - □ SOB
     - □ Chest pain
     - □ Other (comments) ...........................................

2. **Current History**

   - **Mechanisms:**
     - □ Trauma
     - □ Metastatic spread
     - □ Other (comments) ...........................................

3. **Past History**

   - **Previous imaging/surgery/treatments:**
     - □ Emphysema
     - □ Asthma
     - □ Pneumonia
     - □ Bronchitis
     - □ TB
     - □ Chest surgery (year of surgery/comments) .................
     - □ Other (comments) ...........................................

4. **Special questions:**

   - Pregnant: YES / NO

5. **Psychosocial/occupational history – if applicable:**

   - □ Current smoker
   - □ Coalmines or asbestos worker
   - □ Previous smoker
   - □ Duration (if applicable)
   - □ Other (comments) ...........................................

6. **General comments on patient condition**

   ..............................................................................
   ..............................................................................
Radiographic Clinical History Template: 
EXTREMITIES

1. Area and type of symptoms
   
   ROI and referred pain: (please also indicate on body chart)
   ..........................................................
   
   - Symptoms: ..........................................................

2. Current History
   - Mechanisms: (Comments) .............................................
     
     ☐ Trauma    ☐ Metastatic spread    ☐ Infection/inflammation
     
     ☐ Degenerative (OA/RA) ☐ Other (comments) ..................
     
     Behaviour of Symptoms & irritability: (comments) ...........
     ..........................................................

3. Past History
   - Previous imaging/surgery/treatments:
     
     ☐ prosthesis (long/short) ☐ pins ☐ replacements ☐ cancer
     
     ☐ surgery (year of surgery) ............... ☐ Previous injury to ROI (comments) .............................................................

4. Special questions: Pregnant YES / NO

5. Psychosocial/occupational history - if applicable:
   
   ☐ Regular activity/exercise/sport ☐ Requirements of occupation (repetitive strain, overuse)
   
   ☐ Comments ........................................................................................................................................................................

6. General comments on patient condition
   ..........................................................
   .............................................................
1. Area and type of symptoms

ROI: (please also indicate on body chart)

☐ cervical    ☐ cervico-thoracic    ☐ thoracic

☐ thoraco-lumbar    ☐ lumbar    ☐ lumbo-sacral

- Symptoms: ..........................................................................................

☐ pain on movement    ☐ numbness    ☐ Tingling/pins&needles

☐ Other (comments)................................................................................................

2. Current History

- Mechanisms: (Comments) ...........................................................................

☐ Trauma    ☐ Degenerative disease    ☐ Metastatic spread

☐ Congenital malformations/disease

3. Past History

- Previous imaging/surgery/treatments:

☐ back screws    ☐ spinal infusion    ☐ cancer

☐ surgery (year of surgery) ...................... ☐ Previous injury/condition to ROI (comments) ............................................................

4. Special questions:    Pregnant    YES / NO    ☐ Dentures (for c-spine)    ☐ Osteoporotic

5. Psychosocial/occupational history – if applicable:

☐ Regular activity/exercise/sport    ☐ Occupational requirements (repetitive strain, heavy lifting)

☐ Comments ..........................................................................................................................