

health

Guidelines for a limited X-ray service in small rural health services

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Introduction

A limited X-ray operator model has been available in Victoria and Tasmania (using limited licensed general practitioners (GPs) only) and in Western Australia, New South Wales, Queensland and South Australia (using limited licensed GPs and other health professionals, including nurses) for many years. Licensed GPs have been taking limited X-rays in Victorian rural health services for more than 30 years. Following a pilot to train nurses to perform limited X-rays at Lorne Community Hospital in 2009, the Victorian Department of Health committed to developing statewide guidelines for small rural health services (SRHSs) wanting to provide a limited X-ray service performed by operators licensed to use X-ray apparatus for limited radiography.

Key drivers – promotion and provision of quality healthcare services and community expectations

This guide provides the framework for SRHSs that are considering establishing a limited X-ray service using GPs, registered nurses (previously known as 'division 1 nurses', that is, not enrolled nurses) or other registered health professionals. It provides guidance to assist these health services in assessing the need for limited X-ray services in local communities, effectively and safely implementing the model and monitoring the ongoing service. It should be noted that although this guide recognises that a range of registered health professionals can act as a limited X-ray operator in a SRHS, it refers predominantly to nurses because they are usually the most appropriately positioned health professionals in such health services.

When implemented in line with these guidelines, a limited X-ray service in a SRHS has the potential to benefit rural Victorians by:

- enabling timely and efficient diagnosis of a presenting minor injury (rule out fracture) or illness
- preventing unnecessary travel, time, costs and pain associated with needing to access the service at a larger centre
- reducing waiting times (if subsequent attendance at a larger centre is needed), as the X-rays taken by the remote operator can then be used by the team at the larger centre.

When implemented in line with these guidelines, a limited X-ray service in a SRHS has the potential to benefit health services by:

- providing access to minor radiographic examinations at locations where, or when, a radiographer is not available
- enhancing the comprehensive assessment undertaken by clinical staff, ensuring appropriate patient management decisions can be undertaken at the local level
- meeting a service gap for the local community members who might otherwise need to travel long or time-consuming distances to get to a major medical imaging centre
- reducing the pressure on emergency department services at larger centres
- providing potential cost offsets such as a reduction in ambulance transfers to larger centres
- providing a risk mitigation strategy in areas with limited ambulance services.

Limited X-ray service in small rural health services

A limited X-ray service in SRHSs is defined as a service that has one or more appropriately trained and licensed GPs, registered nurses or other registered health professionals who are licensed under the *Radiation Act 2005*¹ to perform a limited range of X-rays on patients who are assessed (and properly referred) by an authorised referring practitioner as requiring diagnostic imaging. The images taken by the limited X-ray service operator in the SRHS are transferred electronically to a radiologist at another (auspice) service for interpretation. Once interpreted, the findings are then relayed back to the SRHS.

¹ Radiation Act 2005, Victorian Law Today section, Victorian Legislation and Parliamentary Documents website, viewed 2 May 2013, <www.legislation.vic.gov.au>

Key principles

The key principles that underpin the model of minor radiographic examinations being undertaken by limited X-ray service operators in SRHSs are:

- The intention of introducing limited X-ray services at any SRHS site is not to replace or to substitute for radiographic services provided by a radiographer.
- The principal purpose of limited X-ray services is to improve patient care and service access in those SRHSs where or when no radiographer is available (either at the site or on call) and all avenues have been explored for employing a radiographer.
- The radiographic services and image quality provided by non-radiographer limited licensees should be at a standard that enables timely and efficient diagnosis of a presenting minor injury or illness.
- Limited licence radiography should only be performed if the examination is likely to influence the management of the patient and if it is within the capacity of the SRHS to appropriately manage the patient's condition.

Radiation legislation

The Radiation Act establishes a system of licensing those who conduct radiation practices and those who use radiation sources. The purpose of the legislation is 'to protect the health and safety of all persons and the environment from the harmful effects of radiation'² and incorporates:

- the Radiation Protection Principle
- the concept of licensed activities including
 - a management licence to authorise radiation practice (such as possessing a radiation source)
 - a use licence to authorise a person to use a radiation source.

The Radiation Act creates an offence³ under s. 12 for a person to conduct a radiation practice unless that person holds a management licence that allows the person to conduct that practice or is exempted from that requirement and the practice is conducted in accordance with the exemption. Similarly, under s. 14 of the Act, a person must not use a radiation source⁴ unless the person holds a current use licence that allows that use or is exempted under s. 16 of the Act from the requirement to hold a use licence.

Licence holders are required to comply with the conditions of their licence.⁵

It is also an offence for a person who is in possession of a prescribed radiation source (which includes most types of medical diagnostic X-ray units) to permit a person to use the radiation source unless there is a current certificate of compliance for that source. For more details about this matter, please refer to the document *Equipment testing and compliance certificates*, available at <<http://docs.health.vic.gov.au/docs/doc/Equipment-testing-and-compliance-certificates>>.

For more details about these and other offences under the Radiation Act, please refer to a summary document available at <<http://docs.health.vic.gov.au/docs/doc/Serious-offences-under-the-Radiation-Act-2005>>.

Management licences

Management licences are issued by the Department of Health to a person or a company authorising them to conduct a radiation practice such as possessing, selling or disposing of a radiation source.

These licences are typically issued to a company but can also be issued to individuals or partnerships. The licences are issued for periods of one, two or three years. These licences may authorise radiation practices to occur at multiple sites across Victoria involving multiple radiation sources. The licences will, in the context of this document, specifically list the sites that have been authorised to possess a specified type of medical diagnostic X-ray unit. The management licence will also list the actual equipment (including serial numbers) that the licence holder has in its possession, as notified to the department.

² Radiation Act 2005 s.1, Victorian Law Today section, Victorian Legislation and Parliamentary Documents website, viewed 2 May 2013, <www.legislation.vic.gov.au>

³ *ibid.*, s. 12

⁴ *ibid.*, s. 13

⁵ *ibid.*, s. 15

All management licences issued by the department are subject to a number of conditions. While some are general in nature and relate to matters such as the reporting of radiation-related incidents or the acquisition and disposal of radiation sources, other conditions relate to the specific practice that is being authorised by the management licence.

In the case of medical practices, all management licences are issued requiring the management licence holder to comply with the responsibilities of the 'responsible person' described in the *Code of practice for radiation protection in the medical applications of ionizing radiation* (2008), published by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).⁶

These responsibilities include matters such as:

- ensuring that a radiation management plan is developed and that all those affected by the plan follow and comply with that plan
- justification of medical procedures involving exposure of an individual to ionising radiation
- optimisation (using the lowest radiation amount practicable to achieve the outcome)
- managing occupational radiation doses
- record keeping
- quality assurance programs
- staff training
- radiation shielding.

For more information about management licences please refer to the department's website at www.health.vic.gov.au/radiation/businesses.

Use licences

These licences authorise the holder to use specified types of radiation sources for a specified purpose. The licences are issued for periods of one, two or three years.

All use licences are issued subject to one or more conditions. In the case of medical practices, all use licences are issued requiring the use licence holder to comply with the responsibilities of the 'operator' described in the *Code of practice for radiation protection in the medical applications of ionizing radiation*.

In the case of use licences issued to SRHS limited X-ray operators the licence also limits the use to:

- plain radiography of the limbs distal to but not including the shoulder girdle and pelvis, except in the case of a medical emergency when radiography of any part of the body may be undertaken
- specified Victorian SRHSs, as listed at www.health.vic.gov.au/ruralhealth

Note that there are fees associated with applying for a licence and for periodic renewal. The current fees can be accessed at <http://docs.health.vic.gov.au/docs/doc/Radiation-Licensing-Fees>.

The use licence application must include information such as:

- the type of radiation source the person will use
- what purpose the radiation will be used for
- evidence of the user's qualifications
- evidence the user is registered as a health practitioner under the *Health Practitioner Regulation National Law (Victoria) Act 2009*.

This use licence must be obtained by all personnel who are going to use a radiation source (such as an X-ray machine). A use licence is valid for up to three years from the date of issue⁷ and it is the responsibility of the licence holder to renew the licence prior to expiry. The licence can be cancelled or suspended by the Secretary to the Department of Health for breaches of its terms of use.⁸

⁶ Available from <http://www.arpansa.gov.au/publications/codes/rps14.cfm>.

⁷ Radiation Act, s. 48, Victorian Law Today section, Victorian Legislation and Parliamentary Documents website, viewed 2 May 2013, www.legislation.vic.gov.au

⁸ Radiation Act, ss. 48 and 51, Victorian Law Today section, Victorian Legislation and Parliamentary Documents website, viewed 2 May 2013, www.legislation.vic.gov.au

Health professional legislation and policy

Scope of practice in relation to limited X-ray

Scope of practice is defined by the Australian Nursing and Midwifery Council as 'the full spectrum of roles, functions, responsibilities, activities and decision-making capacity that individuals within that profession are educated, competent and authorised to perform'.⁹

The scope of professional practice is set by legislation, incorporating professional standards such as competency standards, codes of ethics, conduct and practice, as well as public need, demand and expectation. Scope of practice may therefore be broader than that of any individual within a particular profession.

The actual scope of an individual's practice is influenced by:

- the context in which they practise
- the level of competence, education, qualifications and experience of the individual
- a health service's policy, quality and risk management framework and organisational culture.

As mentioned in regard to scope of practice when providing a limited X-ray service, the use licence in Victoria stipulates that the licence holder (the operator) must only perform plain radiography of the limbs distal to but not including the shoulder girdle and pelvis except in the case of a medical emergency when radiography of any part of the body may be undertaken. In such medical emergencies, where it is decided that it is necessary to preserve the life or wellbeing of the patient by performing an examination outside the usual scope of the licence, the attending medical practitioner must certify and sign in the patient's record that this was the case.

Continuous professional development

Registered nurses, GPs and other registered health professionals are required to undertake continuous professional development (CPD) to maintain registration with their relevant boards within the Australian Health Professionals Registration Agency (AHPRA). Links to the relevant boards are listed in section 9 (*Other resources*) at the end of these guidelines. To maintain their skills in performing a limited range of X-rays on patients who have been assessed as requiring diagnostic imaging and who have been properly referred, it is recommended that these health professionals engage in ongoing CPD activities that relate to their role as SRHS limited X-ray service operators. Ongoing CPD might include online learning or further periods of supervised practice either on site or at the auspice service (or other radiographic service).

Professional indemnity insurance

Professional indemnity insurance is a mandatory requirement for all health professionals registered by AHPRA. This is explained in the AHPRA mandatory registration standard for each discipline.

Health professionals employed by Victorian public health services receive indemnity when undertaking duties consistent with their terms of employment via the Victorian Managed Insurance Authority (VMIA). This includes health professionals who are SRHS limited X-ray service operators.

Coverage under the VMIA medical indemnity policy will apply and extend to provide protection to nurses and other staff who provide limited X-ray services to patients, based on the following criteria:

1. that the provision of such services and the scope of such duties forms part of the employee's contract of employment and are reflected in the agreement
2. that those providing the service are appropriately qualified and licensed in accordance with applicable national or state requirements
3. that the extension of duties meets the requirement of the following condition (contained in the policy):

4.5 Suitable employees

The health service or organisation named in the Schedule shall at all times exercise care to ensure that:

4.5.1 only Registered Health Practitioners are employed and/or engaged by the health service or organisation;

⁹ Australian Nursing and Midwifery Council 2007, *National framework for the development of decision making tools for nursing and midwifery practice*, Australian Nursing and Midwifery Council, Canberra.

4.5.2 all **Registered Health Practitioners** who have independent responsibility for patient care and who are appointed by the health service or organisation must be appropriately credentialed and have their scope of clinical practice defined in accordance with both their level of skill and experience and the capability of the health service or organisation;

4.5.3 students and/or **Registered Health Practitioners** undergoing training or qualification with the health service or organisation act only under the supervision of suitably experienced and **Registered medical practitioners**;

4.5.4 trainee nurses, state enrolled nurses, nurse assistants and the like of the health service or organisation act only under the supervision of suitably experienced and **Registered nurses....**

(Note: VMIA has advised the primary conditions relevant to SRHS limited X-ray service operators are conditions 4.5.1 and 4.5.2).

Policies and manuals relating to VMIA insurance can be found in section 9 (*Other resources*) at the end of these guidelines.

Requirements overview

These guidelines specifically target the provision of a limited X-ray service in a small rural health setting. Health services planning to establish such a service will need to:

- be a specified Victorian SRHS as listed at www.health.vic.gov.au/ruralhealth
- not have a radiographic service with routine after-hours and on-call capability
- have the capacity to undertake triage in an urgent care situation
- have access to a practitioner who is registered and credentialed at the health service
- have suitable digital imaging equipment
- have low demand for radiographic services – this program is not designed to replace the need for qualified radiographers where there is a legitimate demand
- have a documented auspice relationship with a local/regional radiology service.

Assessing the need

This section outlines the process a SRHS should undertake in reaching the decision to establish a limited X-ray service. The health service needs to consider such issues as client need, whether there are enough cases to warrant the training and to support a sustainable SRHS limited X-ray service, the existence of strong executive support and interested health professionals, and the need for a good relationship with a radiographic service to provide support, ongoing training and quality assurance. The health service may decide to establish a stakeholder working group to assist in assessing the need for such a service.

Analysis and consultation

Prior to implementing a new service it is recommended that SRHSs undertake workforce analysis and data collection to ensure suitability and viability of such a service within the organisation.

Consideration should be given to the following areas:

- availability of sessional outreach (or part-time) or seasonal services provided by a radiographer from another site
- volume of presentations in the relevant patient cohort and analysis of retrospective cases that could have been serviced by a SRHS limited X-ray service operator, including patients requiring transfer for radiography in the previous 12 months
- determination of peak periods of need - may be seasonal due to sporting, workforce considerations
- the impact on the health service workforce and their workload
- evidence of support from a local senior radiographer (as part of an auspice relationship) who is willing to provide advice, training and support to the SRHS limited X-ray service operators as needed
- distance and ease of getting to a radiographic facility.

Learning from the experiences of others is invaluable. It is recommended that prior to developing a new service the SRHS liaises with an already established similar service. Ideally, a collaboration of SRHSs would record their experiences and recommendations to assist those considering implementation in the future.

In considering establishing an SRHS limited X-ray service operator model, health services should also refer to the Department of Health's 2010–2013 strategic directions document *Doing it with us not for us*.¹⁰

Equipment considerations

SRHSs that wish to implement this model will need to have digital imaging equipment that links to picture archival and communication system (PACS) equipment, allowing the diagnostic image to be electronically transferred to other radiological facilities for review, interpretation and reporting.

Financial considerations

A Medicare rebate for diagnostic radiology services is payable only when an eligible 'providing practitioner' provides a report of the service performed to the authorised practitioner who requested the service. Only an eligible providing practitioner can complete the report and only an eligible providing practitioner can receive a Medicare rebate for the service. The current definition of an 'eligible providing practitioner' is a consultant physician or medical specialist in a particular specialty. Currently this does not include allied health professionals or nurses.

In the case of a nurse or allied health professional taking an X-ray image and then having the image reported on by a radiologist in a separate facility, the radiologist would be considered the providing practitioner for the service and would receive any corresponding Medicare benefit.

As the radiology service is the only entity that may claim under Medicare rules, this needs to be considered when addressing the funding of a limited X-ray service in a SRHS.

Financial considerations when establishing the necessary collaborative arrangements with an auspice service to support the limited X-ray service include:

- What is the process for the auspice radiology service to collect the Medicare rebate?
- Will the radiology service refund any portion of the Medicare rebate to the SRHS?
- Will the SRHS be out of pocket due to the limited X-ray service (because of costs related to licensing, initial training, ongoing CPD)?
- Are there cost offsets to the SRHS in providing the limited X-ray service such as reducing ambulance transfer costs?
- Is there community-based financial support that can be accessed to subsidise the limited X-ray service?
- Would a small fee levied against the patient enable the SRHS to recoup costs (for example, a \$20 fee per presentation)?

Under current Medicare rebate rules most SRHS limited X-ray services would need to levy a small fee on the patient for these services or risk operating the service at a loss.

Establishing the service

After identifying the need for a limited X-ray service, the following steps, in order of priority, are required to enable introduction of a successful, efficiently functioning service in rural Victoria:

1. Develop an auspice relationship, including a documented agreement between the SRHS and the auspice centre.
2. Identify and meet equipment requirements (including application for a management licence and licensing of equipment).
3. Select an operator, address mandatory requirements and arrange supervision.

These steps need to be actioned prior to commencing the service and may be informed by a stakeholder working group.

Developing an auspice or collaborative arrangement

One of the requirements of this model is for the SRHS to establish a documented auspice relationship with an existing radiographic service that will provide support and oversight to the limited X-ray service and operators. The existing

¹⁰ Available at <http://www.health.vic.gov.au/consumer/downloads/strategic_direction_2010-13.pdf>

radiographic service may be part of a larger regional hospital or a private medical imaging service. The relationship should be formalised in a service agreement or memorandum of understanding (MOU) and provide for:

- ongoing training and mentoring of operators by registered radiographers
- regular feedback on the quality of images taken, with reference to standard radiographic evaluation criteria
- advice and education regarding positioning techniques
- greater expertise in navigating the radiation safety requirements and legislation
- a source of knowledge in response to questions that operators may have regarding the service
- radiology reports by the radiologist
- a direct source of referral should the imaging be beyond the operator's scope of practice.

An auspice arrangement does not shift liability for compliance with all aspects of the Radiation Act, including conditions of management licences and use licences, associated with the proposed service.

Each SRHS will require all X-ray images to be interpreted and reported upon by a radiologist. Often this capability and service is accessed through the same collaborative arrangement in place for radiographers. Each report and image will form ready reference material for ongoing mentoring and enhancement of the skills of the operator through continuing supervision and oversight.

It is essential to the clinical governance of the SRHS limited X-ray service that these collaborative arrangements include a clearly articulated feedback loop. The feedback mechanism will support operators to improve their skills and will enable monitoring of the quality of the service. The feedback loop should be articulated in the service agreement or MOU so there is no confusion regarding the requirements and expectations of each partner.

Identifying and meeting equipment requirements

Health services using this guide will be small rural, low-throughput facilities without a radiographer readily available. All health services providing a SRHS limited X-ray service require imaging equipment that produces digital X-ray images. The choice of digital imaging equipment has a number of benefits including:

- improved image quality
- removal of film or chemical image processing
- limited space needed to conduct the service – no darkroom required
- reduction in occupational health and safety issues through reduced handling of chemicals
- ease of storage of medical images
- timely access to radiologist services by digitally transferring images rather than using courier services
- facilitating ongoing tuition and mentoring of the operator by the auspice radiographic service.

It is possible that some SRHSs contemplating this model will not have a radiation management licence authorising the possession of an X-ray unit. Where this is the case, the SRHS will need to apply for a management licence. Information about the application process including forms and prerequisites for licensing is available at www.health.vic.gov.au/radiation/businesses. (Note that the application will need to be accompanied by a range of supporting documentation described on the website. Prior to lodging the application the SRHS will need to have considered what type of equipment it proposes to acquire.)

It is also important that prior to lodging the application, the SRHS:

- reviews the Code of practice for radiation protection in the medical applications of ionizing radiation
- will have developed a radiation management plan – the development of this plan ensures that all safety practices and procedures have been considered, developed and agreed on prior to lodging the application for the management licence
- reviews the *Safety guide for radiation protection – diagnostic and interventional radiology* (2008).¹¹ This document is intended to provide a best practice approach to medical practices using this technology. (For example, it recommends the appointment of a radiation safety officer. In practice, at SRHSs this will generally need to be a radiographer from an auspice agency or a radiographer with regional responsibility for radiographic services.)

¹¹ http://www.arpana.gov.au/Publications/codes/rps14_1.cfm

Operator selection, mandatory requirements and supervision

Operator selection

There are a number of criteria for SRHSs to consider when selecting staff to undertake initial training. Selection criteria may include, but are not limited to, the following areas:

- registered health professional (mandatory)
- employed by the health service for a minimum period
- intention to remain at the facility for a minimum of 12 months service after obtaining an X-ray operator licence
- interest in delivering X-ray services
- demonstrated safe work practices
- demonstrated willingness and ability to learn new skills
- skills in a particular area that may complement the role
- performed a role of responsibility, or can work independently and is accountable for their practice
- willing to undertake a training course approved by the Department of Health
- demonstrates adherence to the training program, including reading all relevant information, training manuals and books
- participate in on-call duties
- willing to update skills by attending workshops and seminars, doing face-to-face or online training or additional reading (supported by the employing health service)
- confident performing the task for which they are trained
- willing to maintain their limited use licence.

Mandatory requirements (training and licensing)

The Department of Health requires that a person who wishes to be licensed as a SRHS limited X-ray operator complete an approved course. The courses that have been recognised by the department and that satisfy the prerequisite for a licence authorising limited radiography can be found at <www.health.vic.gov.au/radiation/employees>.

Once appropriate training has been undertaken, an application can be made to the department for a use licence. The application form can be found at <www.health.vic.gov.au/radiation/forms>.

Initial supervision of newly licensed operators

It is recommended that newly trained and licensed limited X-ray service operators undertake a *minimum* period of three days' practical experience under the direct supervision of a radiographer after completing their training and prior to commencing in the role of a limited X-ray operator. During this period the operator should be supported and mentored to gain practical clinical experience and confidence in performing radiographic examinations. The new operator should be given the opportunity to familiarise themselves with the equipment (including safety aspects) that they will be regularly using to provide the limited X-ray service. This period of post-training familiarisation and supervision may provide a basis for an ongoing mentoring relationship with the radiographer.

The health service should be guided by the supervising radiographer as to when a limited X-ray service operator is proficient at carrying out the role independently. The auspice agreement may include a set number of days or number of X-rays to achieve this.

The limited X-ray service operator is to be supported by the SRHS while completing the post-training practical experience. The time spent under supervision should be considered required training and therefore should not affect the employee's future opportunities and access to study leave.

Ongoing supervision and competency

SRHSs are to support their limited X-ray service operator with future training and CPD relevant to the role. CPD activities may include:

- online learning
- further supervised practice on site, at the auspice facility or at another radiographic service

- opportunity to review images and reports with a supervising radiographer.

The role of the limited X-ray service operator must be part of an employee's formal job description and performance plan. Ongoing assessment and supervision by the radiographer should be included as a key performance criterion in the operator's job description. A review against the key performance criteria is to occur annually during a performance appraisal. Copies of the annual appraisal are to be kept by the human resources department. Competency registers are to be updated following annual appraisals.

Ongoing supervision should be provided through the formal auspice arrangement with the radiographic service, which would provide regular feedback and identify issues that require resolution at the local level through further training and supervision.

Feedback from the radiographer of the auspice service should be made available, in all instances, to the person responsible for supervising and managing the SRHS limited X-ray service operator. Written feedback from the radiographer is also to be retained on the operator's personnel file held within the health service's human resources department.

As a matter of course, all images obtained by the SRHS limited X-ray service operator will be viewed by three people: the operator, the referring practitioner and the radiologist. If any of these people feel the images are suboptimal, the images should be reviewed by the supervising radiographer, and timely and appropriate feedback provided. Further ongoing supervised practice should be provided if the review of images indicates the need.

Ensuring safe practice

The safety expectations of the public, the service and the operator undertaking the X-ray need to be met when establishing a new limited X-ray service.

The service

Health services can demonstrate their commitment to safety by ensuring there is documented evidence that all the following elements have been addressed:

- legislation – complying with legislative requirements
- community opinion – the community has been consulted, educated and reassured that the practice is safe
- professional standards – knowledge that the staff member is acting within their scope of practice
- public health policy – supported by the department's *Rural and Regional Health Plan*
- local/organisational policy – policies are in place to support and allow the carrying out of duties
- educational opportunities – time and commitment of the workplace to allow employees to update skills, knowledge and competency
- resource provision – a commitment that resources will be available
- level of supervision – a MOU with an auspice service articulating arrangements for clinical feedback is in place
- roles and responsibilities – clear, up-to-date position descriptions and clinical procedures are in place and readily available
- educational preparation – a commitment that initial and ongoing education will be supported.

Safe practice within a health service relies on support from all levels and should include:

- reliable policy and procedures that are implemented prior to commencing the program (these policies and procedures must be readily accessible at all times)
- access to appropriate manuals and guides for limited X-ray service operators
- clear guidance on how to escalate concerns
- relationships with other organisations that can offer support.

The patient (consumer)

Patient information

The SRHS needs to ensure local treating practitioners and other key stakeholders are aware of the limited X-ray service and also of their obligation to inform patients of options available to them. The referring practitioner should inform the patient about the rationale for a radiographic examination, including the benefits and risks, as well as the option to go to a larger centre for a radiographic service. A patient information sheet or poster should be developed based on the template provided at Appendix 1.

Patient record and other documentation

X-rays must only be undertaken where there is an identified clinical need. The need is determined by the authorised referring practitioner following assessment, and is documented by completing a request form. The assessment must be documented in the patient record and should include:

- allergies
- medical history – including pregnancy status and asthma
- medications.

It is the responsibility of the referring practitioner to ensure that their own contact details are included on the request form so that urgent reports can be readily communicated back to them. The request form must be clearly identified using the three approved patient identifiers:

- name
- date of birth
- address (or medical record number if an admitted patient or an outpatient with a medical record).

Images requiring urgent reporting must be marked as such on the request form. Once taken, the X-ray images are transmitted to the radiology/radiologist service for reporting as per the service agreement/MOU. Request forms are also forwarded either electronically or via fax as per the service agreement/MOU.

A report of the X-ray will be generated by the radiologist and communicated back to the SRHS as per the arrangement in the MOU. A report of the X-ray is to be stored with the record of the patient's presentation and a copy forwarded to the practitioner who initiated the request. Reports will normally include:

- the name of service where the X-ray was taken
- the patient's name
- the patient's date of birth
- the patient's address
- the type of X-ray
- the date the X-ray was taken
- whether an urgent report was requested
- an assessment of the image
- a summary of the findings.

The health record containing the X-ray report is to be maintained according to the following Australian Standards health record system requirements: AS 2828.1-2012 **Health records – Paper-based health records** or AS 2828.2(Int)-2012 **Health records – Digitized (scanned)**.

Technique charts

Technique charts have some important local variations. The SRHS should be guided by the auspice service and the limited X-ray service operator should consult their local radiographer.

Maintaining the service

Maintaining a safe limited X-ray service requires ongoing monitoring and review.

Consumer-related review

Consumer feedback is a valuable tool and gives a health service the opportunity to review and improve its service provision. Feedback is to be handled through the organisation's compliment and complaints management processes.

Monitoring service delivery

SRHSs should monitor a range of indicators to evaluate the impact of the service implementation on its community and its customers. Examples of indicators to be monitored include, but are not limited to:

- satisfaction
 - accuracy of radiography and image quality measured against standard radiographic evaluation criteria
 - number of repeated examinations and projections within a given period and reason for repeat
 - impact on the management of patients
 - satisfaction of the staff taking the radiographs
 - satisfaction of the staff reviewing the radiographs
 - impact (both on the individual and the team) of the staff member reducing time spent in their primary role
 - patient satisfaction with the service provided
 - patient satisfaction with follow-up service
- volume
 - the number of X-rays being performed is sufficient to maintain the service
 - impact on inpatient care resulting from changes to workload allocation
- events/complaints
 - any verbal positive comments or complaints received
 - any written positive comments or complaints received
- risks
 - any identified risks rated and monitored (through ongoing evaluation by the occupational health and safety committee)
 - financial and opportunity cost of providing the service and ensuring that staff maintain their competency.

Monitoring auspice relationship

The auspice arrangements, the role of the auspice organisation and the role of the SRHS all need to be clearly articulated in a service agreement or MOU so that each organisation understands each other's roles and responsibilities.

The document that formalises this auspice relationship needs to clearly define:

- the terms and conditions of the service agreement or MOU
- quality control
- management of any identified risks
- cost of service and payment of fees
- services to be delivered by each partner
- key performance indicators (KPIs) for each partner
- grievance procedures.

An annual review of the auspice relationship and how it is working for all parties is recommended. In addition, it is recommended that the formal procedures and protocols are all in place before the formal relationship commences. A MOU template is provided at Appendix 2 as a guide for what should be considered for inclusion.

Ongoing equipment maintenance

Medical X-ray units used for diagnostic purposes are required to have been tested by a Department of Health approved tester and a current certificate of compliance with radiation safety standards issued before the unit is used. These certificates are only valid for one or two years depending on the type of unit. Further information on the testing system is available at <<http://docs.health.vic.gov.au/docs/doc/Equipment-testing-and-compliance-certificates>>.

Radiation incidents

All management licences require that all radiation incidents be reported to the department. The department's website provides further details in the 'Incident reporting' section at <www.health.vic.gov.au/radiation/businesses>.

All Victorian publicly funded health services and agencies that provide health services on behalf of the Department of Health are also subject to the *Victorian health incident management policy*. The Victorian Health Incident Management System (VHIMS) will be used to record and track all adverse events and incidents relating to X-ray services.

Please note the requirements to:

- under the Radiation Act, report radiation incidents to the Department of Health
- record the incidents in the VHIMS.

Other resources

Continuing professional development

<http://www.medicalboard.gov.au/Registration-Standards.aspx>
<http://www.nursingmidwiferyboard.gov.au/Registration-Standards.aspx>

Professional indemnity insurance

<http://www.nursingmidwiferyboard.gov.au/Registration-Standards.aspx>
<http://www.medicalboard.gov.au/Registration-Standards.aspx>
<http://www.vmia.vic.gov.au/Insurance/Policies-and-Manuals.aspx>.

Management licence holder

<http://docs.health.vic.gov.au/docs/doc/Mandatory-radiation-safety-requirements---Management-licence-holders-obligations>

Operator

[http://docs.health.vic.gov.au/docs/doc/Mandatory-radiation-safety-requirements-for-use-licence-holders-\(Use-Licence-Condition\)](http://docs.health.vic.gov.au/docs/doc/Mandatory-radiation-safety-requirements-for-use-licence-holders-(Use-Licence-Condition))

Consumer-related input

<http://www.health.vic.gov.au/hsc/resources/guide.htm>

Consumer information

<http://health.vic.gov.au/consumer/pubs/written.htm>
<http://clearinghouse.adma.org.au/browse-resources/health-literacy/dept-health-literacy-checklist/view.html>

Patient identification and procedure matching

http://www.mrbp.vic.gov.au/cmsfiles/Protocol_GeneralRadiology&Ultrasound.pdf

Further Reading

Australian Institute of Radiography 2007, *Guidelines for professional conduct for radiographers, radiation therapists and sonographers*, AIR, Melbourne.

Australian Institute of Radiography 2011, Rural and Remote Practitioners Advisory Panel, *Limited licence remote X-ray operator radiography in Australia*, discussion paper, AIR, Melbourne.

Australian Radiation Protection and Nuclear Safety Act 1998 (Cwlth)

Australian Radiation Protection and Nuclear Safety Agency 2008, *Code of practice for radiation protection in the medical applications of ionizing radiation*, Government Printers, Canberra, May 2008

Department of Health 2011, *Evaluation of three Better Skills Best Care pilot projects*, PricewaterhouseCoopers, Melbourne

Department of Health 2012, Mandatory radiation safety requirements, Management licence holder's obligations, State Government of Victoria, Melbourne.

Ong T 2011, Report on evaluation of X-ray operator films from Lorne Health Service, Department of Health, Melbourne

Radiation Regulations 2007 (Victoria), Version No. 003

Smith ANS 2006, Remote X-ray operator radiography: a case study in interprofessional rural clinical practice, doctoral thesis, University of Newcastle, Newcastle.

ADVICE TO PATIENTS

LIMITED X-RAY SERVICE AT THIS SITE

This facility provides limited (non-radiographer) X-ray services for patients referred by a doctor or other registered health practitioner. The X-ray examination will be performed by a registered nurse or a medical practitioner who has been trained for this specific role.

If it is determined that your injury or illness requires an X-ray that cannot be performed at this site, you may need to travel to [*insert name of relevant larger regional centre*] for assessment and examination by a radiographer.

**Your treating practitioner
will discuss your options with you.**

Appendix 2: Memorandum of understanding - template

Memorandum of understanding (MOU)

*As local agreements for a limited X-ray service auspice relationship may vary, this MOU **template** is being provided as guidance for what should be considered for inclusion in your own organisation's MOU. Where existing agreements are in place, these should be reviewed to ensure the elements outlined in this template are considered and included where appropriate. Please refer to the document Guidelines for a limited X-ray service in small rural health services to inform the development and/or review of your MOU for a limited X-ray service auspice relationship.*

Note: When finalised, the MoU should be signed by both parties

This document represents an agreement between

Name of SRHS

and

Name of auspice organisation

Description of participating organisations

- Brief description of the SRHS and the auspice organisation

Terms of agreement

- Duration of agreement
- How amendments will be negotiated
- Processes for renewal or extension

Roles and responsibilities – SRHS

- Completion of process for assessing the need for a limited X-ray service (as per 'the guidelines')
- Management of radiation legislative requirements, including management licence, equipment requirements and maintenance (as per 'the guidelines')
- Ensure copies of the management licence, current certificate of compliance (for equipment) and the use licence (including licensing conditions) made available to the auspice organisation
- Provision of a trained, licensed operator for the limited X-ray service
- Ensure provision of recommended practical experience for the **recently trained** licensed operator, as per the guidelines (note: supervised time should be a requirement therefore should not affect an employee's future opportunities or access to study leave)
- Support for the ongoing supervision/mentoring needs of the operator, as recommended in the guidelines

Roles and responsibilities – Auspice organisation

- Agreement regarding provision of a radiographer to supervise/mentor the **recently trained** licensed operator for the initial recommended practical experience, as per the guidelines
- Agreement regarding provision of ongoing supervision arrangements as required (for example, regular meetings between the supervising radiographer and operator, regular feedback via email/telephone/face-to-face or further supervised practice on site / at auspice facility / at another radiographic site, as per the guidelines)
- Agreement regarding the availability of radiographer(s) to review images and provide feedback as required, as per guidelines

Financial arrangements

- Set up costs (including equipment and other resources such as technique charts)
- Medicare rebate

- Fees, charges, disbursements

Communication and exchange of information

- Agreement on what needs to be included on referral form (refer to guidelines)
- Image transmission process
- Image reporting process

Quality assurance/clinical risk (feedback loop)

- Processes for assuring quality of images, scope of practice,
- Processes for addressing quality issues, out of scope practice, clinical assessment and management issues

Management of images and reports

- Who provides patients with copies of their images
- Who is responsible for archiving images and reports
- Where images and reports will be archived
- Duration of archiving images and reports (as per Australian Standards)

Monitoring and evaluation of the service

- Provision for the service to be monitored and evaluated (as per the guidelines)
- How the service will be monitored and evaluated (refer to the guidelines for suggestions)
- How often the service will be monitored and evaluated

Consumer information

- Ensure local treating practitioners and other key stakeholders are aware of the limited X-ray service and their obligation to inform patients of their options
- Agreement of what will be included in consumer information material (*Note: The Department of Health has provided a template*)

Effective dates and signatures

Appropriate authorities from each partner in the auspice relationship are to sign and date the MOU.

Appendix 3: Checklist – requirements for practice

Any small rural health service (SRHS) that wishes to establish a SRHS limited X-ray service should ensure it meets all of the following checklist items.

- SRHS must:
 - understand the responsibilities of the 'responsible person' as described in the Code of practice for radiation protection in the medical applications of ionizing radiation (2008)
 - understand the good practice advice and guidance described in the Safety guide for radiation protection – diagnostic and interventional radiology (2008)
 - have collaborative arrangements in place including
 - a MOU or service agreement with a radiographic service
 - regular continuing professional development and mentoring for the operators
 - develop a radiation management plan that complies with the code of practice by, among other things addressing: work practices, construction and shielding of the premises where the X-ray unit is to be used; personal radiation monitoring requirements; and actions required following any radiation incident
 - have a process in place to acquire appropriate imaging equipment that produces digital images and the ability to immediately communicate those images at acceptable image resolution standards to the parent site (via PACS)
 - hold a management licence before obtaining the X-ray unit
 - ensure accreditation for the facility (for example, by the National Association of Testing Authorities)
 - be aware of its legal obligations.
- Operators must be:
 - trained via a course approved by the Victorian Department of Health as meeting the required standards under the *Radiation Act 2005*
 - authorised to use the X-ray unit by a current use license
 - aware of their legal obligations and limitations.