The Faculty of Radiologists Statement on Nurse Referrals in Radiology Departments

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There is increasing demand for Advanced Nurse Practitioners to refer for Radiology Examinations. This is being actively supported by the HSE.

Referral, performance and interpretation of imaging are common radiological aspects of patient care. Radiological reports composed pursuant to a radiological examination are intended to be a consultation document to the person responsible for the patient and a communication document regarding the patient's treatment.
The use of radiological imaging to guide patient care is central to medical practice. The mediclegal description of sending a patient for a radiological imaging investigation has changed from a prescription to a referral. Recent legislation has reaffirmed and expanded the range of healthcare professionals who can refer patients for medical imaging which uses ionising radiation, including radiographers and nurses.

Registered Nurses who meet the Nursing and Midwifery Board of Ireland (NMBI) (1) criteria are legally entitled to refer for patients for radiological examinations using ionising radiation under SI 256 2018 (2) (Irish implementation of EU directive 13/59(3)).

i. Nurse prescription of ionising radiation was also allowed in the previous SI 303 2007 legislation which SI 256, 2018 replaces. The term prescribing of ionising exams has been replaced by the term referral of ionising radiological exams in the new legislation. The newer guidelines and the legislation have not limited the range of examinations or procedures for referral. The Faculty recognises the potential for increased referrals will lead to increased demand with increased waiting times in a system that is already under resourced in terms of staffing and equipment. This statement outlines the Faculty position regarding the criteria for implementation of a nurse referral programme for radiological examinations.

ii. Although nurse prescription of ionising radiation was also allowed in the previous SI 303 2007 legislation which SI 256, 2018 replaces, it is envisaged that the volume of nurse referrals for radiological examinations will increase further in a system that is already under resourced in terms of staffing and equipment. As the present guidelines do not limit the range of examinations or procedures for referral, and there is active Health Service Executive (HSE) support to expand

nurse referral for imaging, it is important that safe radiological governance principles are established from the outset.

MRI and ultrasound are not covered by the legislations as they use non ionising radiation but they will have service impacts. Practitioners such as radiologists and radiographers are required under the legislation to justify that the benefit of such procedures outweigh the risks involved on an individual basis. International estimates show that a significant number of radiological procedures may not be justified (4).

This statement outlines the Faculty position regarding the criteria for safe implementation of a nurse referral programme for radiological examinations.

Training Requirements

The recently published NMBI detailed criteria which refer to the scope of practice, clinical governance and training but do not refer to the specific training requirements for individual modalities. The lack of such training requirements has been identified as a barrier to the implementation of a quality based referral system with patient safety at its core. It is proposed that Clinical Decision Support tools could be used to reduce the risks, costs and service impacts of inappropriate referrals(4).

It should also be remembered that there are legal obligations on the referrer as well as the practitioner (5). These legal obligations are impossible to meet without the referrer having adequate medical and radiological training in the specific techniques involved. Many training modules provide sub-optimal training in the use of high radiation dose examinations and procedures.

The recently published NMBI standards and requirements publication details the learning outcomes, competences, performance criteria and indicative syllabus content, the scope of practice, clinical governance and training required of nurse referrers. Specific training requirements for individual modalities are not included. Although this may be the remit of scope of practice, adequate training is particularly relevant to high dose radiological examinations such as CT are concerned. The lack of such training requirements has been identified as a potential limitation to the implementation of a quality based referral system with patient safety at its core. Individual training programs will need to address this deficiency but to ensure uniform adoption of good radiological referral practices recommended that Clinical Decision Support tools should be implemented into practice to reduce the risks, costs and service impacts of inappropriate referrals (4).

The undertaking and the practitioner need to be satisfied that such training is adequate and specific for the examination being requested. The providers of nurse referral and advanced nurse practitioner courses need to ensure that such requirements are covered in their programmes. They also need to provide additional courses where gaps exist. The local undertaking may need to provide additional radiologists, radiographers, medical physics and nursing resources for such training.

RP 175 (6) details the requirements for training of referrers that should be offered as a minimum:

Table 3.1: Learning outcomes in radiation protection for referrers

	Knowledge (facts, principles, theories, practices)	Skills (cognitive and practical)	Competence (responsibility and autonomy)
Patient safety/risk management	K1. Explain the principle of justification and its application at different levels including for asymptomatic individuals and on a case by case basis K2. List the diagnostic and therapeutic practices that are formally approved through legislative or administrative acts at the national or state level. K3. Explain why certain groups are more susceptible to harmful effects of ionising radiation (e.g. children, pregnant patients) K4. Explain the joint responsibility of referrers and imaging specialists in the justification process of a radiological examination as specified by European and national legislation. K5. List approximate values of radiation doses for common diagnostic examinations K6. Explain the importance of the utilisation of clinical and radiological information from previous examinations in the process of justification K7. Discuss some clinical situations where a test with non-ionising radiation is better than one using ionising radiation K8. List and describe available appropriateness criteria and guidelines applicable in your area of practice K9. Discuss the information to be provided to patients with respect to benefits and radiation risk and risk of procedures in own area of practice K10. Explain principles governing the use of ionising radiation in woman of child-bearing age K11. Discuss the pros and cons of an examination involving the use of a radiopharmaceutical for breastfeeding women and action warranted to protect the child K12. Explain circumstances in your practice where use of ionising radiation on a child is justified	S1. Apply the principle of justification to specific groups of patients and individuals including the exposure of asymptomatic individuals, comforters and carers S2. Identify situations in which the use of ionising radiation is justified in the case of pregnant women, women of reproductive age, children or breast feeding mothers S3. Assess the cumulative effective dose for a series of exams for a given individual patient S4. Carry out a review of the literature to aid justification in cases for which appropriateness criteria are not yet available S5. Explain benefits and risks of particular procedures to specific patients S6. Inform patients of their health problems and the planned procedure S7. Communicate the radiation risk to the patient at an understandable level, whenever there is a significant deterministic or stochastic risk, or when the patient has a question	C1. Take responsibility for justification in accordance with requirements in European and national legislation and guidelines of professional bodies C2. Implement published appropriateness criteria in own practice C3. Provide necessary information in referral for imaging facility to aid in optimisation of an examination C4. Advise actions in case of inadvertent radiation exposure of a pregnant patient C5. Be competent to diagnose radiation induced skin injury and other potential radiation effects in a patient or a worker in a radiation facility and avoid unnecessary referral C6. Act as a role model for junior colleagues to support the processes of justification and optimisation of radiation protection

Clinical Governance

Good clinical governance as part of the NMBI criteria and service impact are key components of a successful and safe implementation of a radiological referral programme. The impacts and resource requirements of any change of practice should be assessed and involve stakeholders that include the provider of the radiological examinations. A safe legally based expansion of radiological services to meet both Slainte Care and the National Cancer Strategy is also needed.

The Faculty strongly recommends that Radiological referral pathways should involve a team approach on the referral side, with a named Doctor documented as being in overall charge and who bears responsibility for the proscribing patterns of members of his/her team. Patients must not be put at risk of unnecessary radiation exposure, or other harm, resulting from a lack of clarity on who is responsible for each step of a pathway that involves referral for a Radiological investigation, particularly those investigations which use ionising radiation.

Radiologists must not be put in a position where they are exposed to vicarious liability resulting from a lack of clarity on who is responsible for each step of a pathway that involves referral for a Radiological investigation, particularly those investigations which use ionising radiation.

The State Claims Agency should be consulted to verify that all HealthCare personnel working in the Public system, who participate in a Radiological referral Programme, are covered

under the Clinical Indemnity Scheme (CIS). Similar indemnification should be sought from appropriate Insurance carriers in the private healthcare system.

Radiology referral pathways should always specify a named Clinical Consultant as the documented lead of the pathway on the referral side. Consultants should be on the specialist register of the IMC. He/she bears responsibility for the proscribing patterns of Nurses and NCHD members of the referral team, and also for acting on the results of a Radiological investigation. Nurse members and NCHD members of the referral team should be electronically linked to the specified Consultant Lead of the clinical referral team on NIMIS and non-NIMIS PACS platforms. The Consultant Lead of the referral team should be readily identifiable to a reporting Radiologist, on NIMIS and non-NIMIS PACS platforms, when a Radiological investigation is requested on a patient by a Nurse Member, or NCHD member, of the clinical referral team. Non-Consultant doctors serving in 'Acting up' capacities should be strictly prohibited from these roles as lead of the clinical referral team.

A named principle GP may serve as the Clinical lead of a radiology referral pathway in community settings.

For all Radiology referral pathways, the proscribing patterns of clinical referral teams and their individual members, should be subject to regular audit with follow-up actions to address outlier referral patterns. Local policies and procedures can be set by LIGs.

It is envisaged that imaging requests will occur within the scope of nurse's practice and consistent with patient care pathways within the unit of practice which has been agreed upon in consultation with the radiology department. Circumstances occur where consultation between the referrer and radiologist or radiographer is required prior to, during or following an imaging investigation. This includes imaging of the potentially pregnant patient, contrast allergy, renal dysfunction, contrast reactions, cardiac events and unexpected or emergency findings. Provision needs to be made that this can continue to occur under new arrangements. The interpretation of an imaging report is vital to patient treatment. The receipt of imaging reports should be demonstrable and the report contents acted upon appropriately. Interpretation of pathological findings described in an imaging report is the responsibility of the consultant or General Practitioner responsible for the patient's care and this person needs to be responsible for acknowledging reports. Systems also need to be instituted to ensure that review of imaging reports occurs in a timely manner as delayed review or non-review of reports poses a significant medical risk. Therefore all imaging report should be sighted and acted upon by the referrer or by a designated team member. The referrer acts as a vital conduit of information to the patient and often has to interpret and explain imaging reports to a patient. It is important that patients are provided with information regarding the indication and nature of the proposed imaging and how the patient will receive imaging results. These communications need to be documented. Provisions may be made to address common imaging findings particular to a patient care unit.

Local Implementation Group

Many of these anticipated impacts are service related (6) rather than strictly the remit of legislation, e.g. will practice changes lead to more referrals? Will this impact current and future waiting lists? Is there capacity for more examinations? Will more radiologists, non-radiology clinicians be required e.g. cardiologists, radiographer, medical physics, nursing, administrative resources? Will more equipment be required? Who is responsible for the patient? Who will deal with the results of these examinations? Who is obliged to follow up on significant findings?

These issues should be dealt with by a local implementation group outside of the radiation safety committee meeting and report their findings to that meeting. The local implementation group should consist of:

- Senior Hospital Management
- Radiographic Service Manager
- Radiologist
- Director of Nursing
- Nurse Practitioner tutor
- Risk Manager for the Hospital
- Quality Manager
- Radiation Protection Officer
- Medical Physics
- Patient Representative (if available)

Systems will need to be put in place for adequate continuity of service of such referral systems if individuals are not available. A phased approach on a case by case basis will allow for a more streamlined introduction of the service. Both practitioners and referrers will need reassurance their indemnity covers their change of scope and practice.

Clinical Decision Systems

Clinical audit of radiological practices are mandated under the directive. Audit has been a key part of the introduction of nurse referral. To manage this properly for the huge number of examinations the faculty believes that the introduction of clinical decision support tools and dose monitoring or tracking systems are also necessary to fulfil the criteria for the directive.

Need for an implementation Plan for SI 256 2018

The faculty recognises that the implementation of nurse referral is only one aspect of the implementation of the new legislation and directive 13/69. There are other aspects such as the training requirements for non-radiology practitioners, the medical physics experts register, and updated ethics statements from the medical council, the undergraduate syllabus which also need to be implemented (8). The previous legislation required a task force (9) to ensure its implementation and this may be warranted here.

Imaging without ionising radiation

Good radiation protection practice entails the use of modalities where ionising radiation can be avoided where possible. It is important that referral for these modalities be available for referral where possible. MRI and ultrasound are not covered by the legislations as they use non ionising radiation but access will have service impacts as with imaging using ionising radiation. Practitioners such as radiologists and radiographers are required under the legislation to justify that the benefit of ~~such~~ imaging using ionising radiation outweigh the risks involved on an individual basis. International estimates show that a significant number of radiological procedures may not be justified (4).

Summary

Nurse referral programmes should meet NMBI criteria and include scope of practice and detailed evidence of proper clinical and radiological training. If gaps exist these should be remediated by training providers. Local training may be provided by radiologists, radiographers and medical physicists. These should be properly resourced.

The programme should be implemented through a local implementation group that are adequately resourced to deal with any service impacts for both service providers and referrers. Indemnity for practitioners and referrers needs to be included in any service change. Clinical audit and clinical decision support tools with radiation dose tracking need to be implemented as a matter of priority to oversee such a referral programme.

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