Module Specification

Enhancing Nuclear Medicine Practice

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Contents

Part 1: Information

Module title: Enhancing Nuclear Medicine Practice

Module code: UZYSQ5-30-M

Level: Level 7

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Health & Applied Sciences

Department: HAS School of Health and Social Wellbeing

Partner institutions: None

Field: Allied Health Professions

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: See Learning Outcomes.

Outline syllabus: Data Acquisition and Processing:

The optimal use of imaging parameters and technological advancements within

current Nuclear Medicine practice

Consideration as to the values of various data acquisition and image processing techniques

Introduction to 3D reconstruction algorithms

Nuclear Medicine Strategic Developments:

The importance of planned preventative maintenance within the Nuclear Medicine environment

An introduction to equipment procurement

Awareness of the optimal running of a modern Nuclear Medicine department with linkage to current professional drivers

Consideration as to the importance of workforce development and support frameworks

Critical evaluation of radiopharmacy procedures, working environments, legislation and distribution methods

Awareness of Disease Processes – Diagnosis and Treatment:

Understand the role of Nuclear Medicine in the management of a wide range of disease processes

Consideration as to the level of knowledge needed by the Nuclear Medicine workforce to fully understand a range of common disease processes

Awareness of the developing nature of Nuclear Medicine and how such development may influence current patient pathways

Therapeutic Nuclear Medicine and the use of Nuclear Medicine in planning, treatment and monitoring regimes

Enhancement of understanding associated with radiation dosimetry Advancing Aspects of Nuclear Medicine Practice

Future developments within the field of Nuclear Medicine / molecular imaging

Future considerations related to developing radioisotope tracers /radiopharmaceutical shortages

Consideration as to the developing role of the Nuclear Medicine Practitioner

Consideration as to the use of other imaging modalities within the Nuclear Medicine environment

Research in Nuclear Medicine:

Current research areas associated with Nuclear Medicine/molecular imaging

Evidence based practice and NICE

Current themes associated with service improvement in Nuclear Medicine

Part 3: Teaching and learning methods

Teaching and learning methods: The learning and teaching strategy for this module has been developed to provide students with the opportunity to consider the current status of Nuclear Medicine services and to appreciate a range of strategic and technological advancements that have the potential to further enhance the modality. Such areas will include the optimal utilisation of equipment/technology, awareness of the role of Nuclear Medicine within current healthcare models,

consideration as to the efficient management/running of a Nuclear Medicine service and discussion associated with future development opportunities and how these might affect the service, the workforce and importantly the patient.

To ensure engagement with the module learning opportunities, assessment will be linked to involvement in and contribution to discussion boards where specific tasks will be set. These tasks will be constructed to ensure that the module learning outcomes are addressed. Contributions to these tasks will form source material from which students may extract content to add to their cognitive map/portfolio of evidence. Experience from other modules using this format indicates the potential for valuable discussion relating to the module content and helps ensure timely engagement as opposed to leaving personal study and revision to the end of the module delivery. The capacity to engage in debate with peers helps to facilitate networking, peer/shared learning and knowledge exchange.

A variety of teaching approaches will be used including; narrated presentations, video presentations, discussions, seminars, on-line workshops, and article review.

Additional student centred learning guided by tutorials and discussion forums will include:

Evaluation of current working practices.

Directed practical exercises to be undertaken in the student’s place of work.

Scheduled learning will include upto 80 hours engaged with lectures, video presentation, seminars, tutorials, discussion board entries, project supervision, work based learning.

Independent learning will include upto 220 hours engaged with essential reading, assignment preparation and completion, directed work-based tasks, consideration of current working protocols and personal reflection on learning.

Contact Hours:

Contact hours will be achieved through a blended learning approach that will include distance based education supplemented by knowledge exchange events. This distance based education will embrace the university's current vision associated with Technology Enhanced Learning. Such learning will include but not be limited to, asynchronous delivery of lecture material through narrated presentations, notes and other guided reading, VLE discussion board forums with specific objectives, workplace tasks, and other study tasks deemed appropriate to the development of student knowledge.

Formative feedback on allocated study tasks will be provided. Contact with the module leader for discussion of module related issues will be facilitated by email, phone conversations and through interaction at the knowledge exchange events.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Discuss the emerging aspects of Nuclear Medicine in relation to clinical technique, professional practice and impact on patient outcome

MO2 Understand the role of Nuclear Medicine in the management of a wide range of disease processes

MO3 Critically evaluate current technological advancements (both hardware and software) and consider their relevance to modern Nuclear Medicine practice

MO4 Appreciate modern processing/image reconstruction techniques and consider their implications in relation to diagnostic accuracy

MO5 Critically evaluate the organisation and managerial structure of a modern Nuclear Medicine department

MO6 Process and manipulate images in the clinical environment in a critical manner and discuss the clinical implications of various data processing techniques

MO7 Critically evaluate the requirements of modern radiopharmaceutical production including various distribution methods

MO8 Appreciate the importance of strategic planning and preventative maintenance techniques within the current Nuclear Medicine environment

MO9 Display awareness of current professional drivers associated with patient waiting times and highlight how these might influence the organisation of modern patient scheduling systems

MO10 Evaluate multidisciplinary aspects of clinical nuclear medicine practice and the necessity for holistic patient centred care

MO11 Discuss the importance of current training requirements for the Nuclear Medicine workforce

MO12 Critically evaluate contemporary research and evidence-based practice within the modern Nuclear Medicine environment

MO13 Appreciate the clinical value of advancing Nuclear Medicine technology in relation to patient prognosis

MO14 Consider the value of clinical mentorship and workforce development within modern nuclear medicine practice

MO15 Demonstrate problem solving skills and an ability to work within a multidisciplinary team

MO16 Prepare written statements and engage in professional debate following research into specified areas of Nuclear Medicine practice

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 220 hours

Face-to-face learning = 80 hours

Total = 300

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/uzysq5-30-m.html

Part 4: Assessment

Assessment strategy: The production of a 1500 word equivalent cognitive map and a 3000 word portfolio of discussion board extracts will demonstrate achievement of the learning outcomes.

Assessment part A task1 – 1500 word equivalent cognitive map:

This task will require the student to critically evaluate an advanced / developing area of Nuclear Medicine practice in order to demonstrate overall benefits that might be seen by the imaging service / patient / workforce. Such an activity will promote evaluation of current practice, consideration as to future practice and awareness of the potential benefits that such changes might bring.

The specific chosen area does not necessarily have to be performed within the student's clinical department, but should relate to current clinical practice and empirical based evidence. A range of possible topic areas are included below:

Workforce development / Training / CPD and Mentorship in Nuclear Medicine

Management and organisation of the Nuclear Medicine department

Multidisciplinary working and decision making (such as, referring / reporting)

Data acquisition / processing / image quality, data protection and information governance

Preventative maintenance of Nuclear Medicine Equipment and the value of Quality Control measures

Optimal radiopharmaceutical utilisation, transportation and safe disposal

Optimising Nuclear Medicine techniques / developing a new imaging service

Role of hybrid / multiplexing imaging and provision of a "one stop clinical service"

Assessment part A, task 2 - 3000 word portfolio of discussion board / ‘wiki’ extracts:

The portfolio will assess selected module learning outcomes. Inclusion of extracts taken from discussion board / ‘wiki’ contributions will help ensure continuous student engagement throughout the moduleas well as providing the opportunity to develop skills associated with problem solving, peer assisted learning, critical reflection and debate.

Formative assessment will be achieved by feedback on discussion board contributions from the module team, indicating where good understanding has been achieved or where there is scope for further exploration and development.

Assessment tasks:

Portfolio (First Sit)
Description: Portfolio of discussion board/"wiki" extracts
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO10, MO11, MO12, MO13, MO14, MO15, MO16, MO2, MO3, MO4, MO5, MO6, MO7, MO8, MO9

Set Exercise (First Sit)
Description: Cognitive map
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO10, MO11, MO12, MO13, MO14, MO16, MO3, MO4, MO7, MO9

Portfolio (Resit)
Description: Portfolio of discussion board/"wiki" extracts
Weighting: 50 %

Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO10, MO11, MO12, MO13, MO14, MO15, MO16, MO2, MO3, MO4, MO5, MO6, MO7, MO8, MO9

Set Exercise (Resit)
Description: Cognitive map
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO10, MO11, MO12, MO13, MO14, MO16, MO3, MO4, MO7, MO9

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Nuclear Medicine [Distance] MSc 2022-23