

**VGH Nuclear Medicine Goals & Objectives**  
**Vancouver Acute**  
**899 West 12th Ave., Vancouver, BC V5Z 1M9**

**Level:** PGY 2-5

**Rotation Supervisor:** Dr. Dan Worsley [dan.worsley@vch.ca](mailto:dan.worsley@vch.ca)

The resident will gain experience in the daily practice of clinical nuclear medicine especially correlative imaging. In addition, he / she will be gain exposure to basic science of nuclear medicine and will have an opportunity to contribute to research in the division.

The practice of radiology requires a thorough knowledge of the various modalities available for the investigation of disease, especially in related areas such as Nuclear Medicine. While there are constraints which apply to this rotation which are unusual, it is expected that radiology residents will gain at least a passing familiarity with the basic Nuclear Medicine procedures and in particular the correlative imaging aspects of Nuclear Medicine studies.

To a large extent, the resident will get out of this rotation experience proportional to their desires and to the effort expended. A Radiology resident may find in the division a Nuclear Medicine resident who should be seen as a resource and guide to the specialty. The various Nuclear Medicine physicians will conduct daily film reading sessions which will comprise the majority of the teaching. In addition, there will usually be formal rounds and teaching sessions which can be taken advantage of.

### **Basic Sciences of Nuclear Medicine**

The basic sciences of nuclear medicine, chiefly nuclear pharmacy and instrumentation (physics), are in some ways different from those in radiology. For those residents with an interest, a proportion of time may be spent in the radiopharmacy laboratory and/or the imaging research labs (Dr Anna Celler) – 2-3 days per month of the rotation would be about right. Spending time ‘on the floor’ with the technologists will help residents to understand nuclear medicine technology and computing and the actual mechanics of performing studies.

### **Clinical Practice**

VGH provides a broad experience in all aspects of adult diagnostic and therapeutic Nuclear Medicine procedures. Any resident wishing exposure to pediatric nuclear medicine can request that such an experience be included in their schedule at Children’s Hospital. PET/CT exposure can be arranged at the BCCA Vancouver Clinic Functional Imaging Centre with VGH staff

The best remedy is to learn enough computer skills to be able to display and manipulate the acquired Nuclear Medicine studies and to perform simple analyses of the recorded images. At the end of 1 month, the radiology resident should feel comfortable managing the Nuclear Medicine computer system and providing preliminary reports on the common procedures.

### **Duties**

Daily involvement with graded responsibility. Residents should, by the end of the rotation, to be able to review all of the studies performed before the reading sessions with staff. They should have formulated a preliminary opinion of the scans and where necessary review any correlative imaging studies. Depending on the level of knowledge and interest, they may be expected to dictate the reports after the reading sessions (if there is no Nuclear Medicine resident present) or to share those duties.

The resident should be involved in clinical image quality assurance. Do the images obtained answer the clinical problem? Are they of sufficient quality or are additional maneuvers or views necessary? Should the patient be sent directly for additional radiologic plain films?

The resident should be involved in direct patient procedures and examinations such as specialized injections, correlative physical examinations of other areas of the body, and the review of results with patients/physicians when appropriate.

The resident should be involved in computer analysis and processing and by the end of their rotation they should be able to display any common study on the computer for interpretation.

When an occasion arises, particularly with interesting cases, the resident is encouraged to prepare and assemble material for the teaching collection or to write up case reports.

## **Can Meds Objectives**

### **Medical Expert:**

- *Demonstrate diagnostic and therapeutic skills for ethical and effective patient care*
- *Access and apply relevant information to clinical practice*
- *Demonstrate effective consultation services with respect to patient care, education and legal opinions*

### **Communicator:**

- *establish therapeutic relationship with patients/families*
- *obtain and synthesize relevant history from patients/families/communities*
- *listen effectively*
- *discuss appropriate information with patients/families and the health care team*
- *Understand the importance of communication with referring clinicians, particularly in a situation in which the results of an investigation or procedure should be urgently communicated.*

### **Collaborator**

- *consult effectively with other physicians and health care professionals*
- *contribute effectively to other interdisciplinary team activities*
- *Be able to suggest alternative modalities when nonimaging nuclear medicine tests may not be appropriate in a given clinical situation.*

### **LEADER ROLE:**

- *Implement processes to ensure personal practice improvement*
- *Set priorities and manage time to integrate practice and personal life*

- Apply the science of quality improvement (ie discussion of potential audit) to contribute to improving systems of patient care
- Contribute to a culture that promotes patient safety, including recognition of patient safety issues, and utilization of health informatics to improve patient safety
- Demonstrate leadership skills to enhance health care
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### **Health Advocate**

- *identify the important determinants of health affecting patients*
- *contribute effectively to improved health of patients and communities*
- *recognize and respond to those issues where advocacy is appropriate*
- *Describe and explain the benefits and risk of nuclear medicine imaging, including exposure to ionizing radiation.*

### **Scholar**

- *develop, implement and monitor a personal continuing education strategy*
- *critically appraise sources of medical information*
- *facilitate learning of patients, housestaff/students and other health professionals*
- *contribute to development of new knowledge*

### **Professional**

- *deliver highest quality care with integrity, honesty and compassion*
- *exhibit appropriate personal and interpersonal professional behaviours*
- *practise medicine ethically consistent with obligations of a physician*

### **Rounds**

Attendance at multidisciplinary conferences and rounds, as available. Attendance is expected at Nuclear Medicine Grand Rounds. The resident is also welcome to participate in other teaching activities lectures and journal club, although such attendance is not compulsory for the radiology resident.

All residents should attend Nuclear Medicine Grand Rounds, which involve physicians city-wide, at 8:00AM every Tuesday, and rotate between Children's Hospital, St Paul's, BCCA and VGH. Occasional extra lectures are scheduled as part of a visiting professor program.

PET Q/A rounds 3rd Wednesday each month 0830 BCCA Radiology resident is encouraged to also attend.

On the first Thursday of each month, there is Thyroid Cancer Conference at 8:00 AM at BCCA, 2nd floor conference room.

Residents are encouraged to attend radiology rounds (especially noon rounds and weekly Radiology Grand Rounds) and to contribute examples in correlative imaging where possible.

### **Reading List:**

The reading list is designed to provide an overview supplemented by selections from reference books. Guided selectivity should be the strategy of choice.

***Nuclear Medicine ( general Nuclear Medicine Texts for Radiologists)***

THRALL J, et al. Nuclear Medicine: The Requisites. 3rd Edition, Mosby (Elsevier), 2005.

METTLER F & GUIBERTEAU. Essentials of Nuclear Medicine Imaging. 6th Edition, W B Saunders (Elsevier), 2012.

\* You may wish to consider purchasing one of these texts, which are shorter and easily digested.

***Basic Science - Nuclear Medicine***

SAHA GB. Fundamentals of Nuclear Pharmacy. 6th Edition, Springer 2011.

KOWALSKY RJ Radiopharmaceutical in Nuclear Pharmacy and Nuclear Medicine American Pharmacists Association 2004

CHERRY, SORENSEN & PHELPS. Physics in Nuclear Medicine. 4rd Edition Saunders (Elsevier), 2012.

LOMBARDI, M H Radiation Safety in Nuclear Medicine CRC Press 2007

***Reference Texts – Nuclear Medicine***

WAHL RL Principle and Practice of PET-CT 2nd Edition Lippincott Williams & Wilkins 2008

BLODGETT TM PET/CT :Oncologic Imaging with Correlative Diagnostic CT Amirsys 2008

ELL PJ and Gambhir SS. Nuclear Medicine in Clinical Diagnosis and Treatment. 3rd Edition, Churchill Livingstone, 2004.