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CHAPTER 252: VETERANS HEALTH ADMINISTRATION - NUCLEAR MEDICINE SERVICE

1 PURPOSE AND SCOPE

A. This document outlines space planning criteria for VA Handbook 7610 Chapter 252: Nuclear Medicine Service. It applies to all medical facilities at the Department of Veterans Affairs (VA).

B. Nuclear Medicine Service includes Positron Emission Tomography (PET) services, Bioassay Unit (Radioinmmunoassay) for inpatients and outpatients and is an ancillary department for the entire hospital facility.

2 DEFINITIONS

A. Concept of Operations: A user-developed guide to the functional operation of the VA healthcare facility. It defines the function of the facility and the scope of medical services to be provided in the new or remodeled space.

B. Diagnostic Room: Designated room containing diagnostic equipment performing patient procedures such as Nuclear Medicine, Bone Densitometry, PET/CT. It may also be referred to as Scanning Room, Procedure Room, or Gantry

C. Functional Area: The grouping of rooms and spaces based on their function within a clinical service. Typical Functional Areas are Reception Areas, Patient Areas, Support Areas, Staff and Administrative Areas, and Residency Program.

D. "Hot": A colloquial term used to describe the presence of measurable radioactivity. In addition to the nature of the radioactive material itself, the distance from the radiomaterial and the time of exposure are important. To keep exposure to radiomaterial to doses that are "as low as reasonably achievable" (ALARA), special waiting / holding area and toilets are designated for patients who have received a radioactive substance.

E. "Hot Lab" / Radiopharmacy: Area for storage, preparation and dispensing of radiopharmaceuticals. It must be secured and provided with adequate shielding. The amount of shielding is determined by a health physicist or radiation safety officer (RSO), depending upon the anticipated usage of specific radiomaterials.

F. Input Data Statement: A set of questions designed to elicit information about the healthcare project in order to create a Program for Design (PFD) based on the criteria parameters set forth in this document. Input Data Statements could be Mission related, based in the project's Concept of Operations; and Workload or Staffing related, based on projections and data provided by the VHA or the VISN about the estimated model of operation. This information is processed through mathematical and logical operations in SEPS II.

G. Net-to-department gross factor (NTDG): A factor that when multiplied by the programmed Net Square Foot (NSF) area, determines the Departmental Gross Square Feet (DGSF). The **NTDG** factor adopted for **Nuclear Medicine Service** is **1.50**.

H. Nuclear Imaging: Method of producing images using gamma or scintillation cameras that detect radiation from different parts of a patient's body after administration of a radioactive tracer material. Since physiologic / pathophysiologic processes are being monitored / measured, the patient must remain under the gamma camera for periods of time that vary from 20 to 90 minutes and may return for delayed images later in the same day or several days later. A clearance of 6'-6" (2 M) must be maintained between staff and patient after patient positioning in the NM Scanning Room. Modalities include planar and Single Photon Emission Computed Tomography (SPECT) imaging, Positron Emission Tomography (PET), fusion imaging and coincidence detection imaging.

I. Nuclear Medicine: A specialized area of radiology that uses very small amounts of radioactive substances to examine organ function and structure. It utilizes the nuclear properties of radioactive and stable nuclides to perform diagnostic evaluations and to provide therapy. Radioactive isotopes are administered either orally, by inhalation, intravenously or in selected instances by direct injection to obtain diagnostic evaluation(s) of anatomic and/or physiologic or pathophysiologic conditions. These evaluations require a wide range of services, encompassing patient consultation and examination, interpretation of images, correlation with other diagnostic methods, determination of metabolic functions, drug levels and body constituents, imaging / computerization and recommendations of the significance of the findings. Nuclear Medicine is composed of several functional units, such as Nuclear Clinical Imaging and Radiobioassay, known as "bench work" or, formerly, Radioimmunoassay.

J. Picture Archiving and Communication System (PACS): The digital capture, transfer and storage of diagnostic images. A PACS system consists of workstations for interpretation, image/data producing modalities, a web server for distribution, printers for file records, image servers for information transfer and holding, and an archive of off-line information. A computer network is needed to support each of these devices.

K. Positron Emission Tomography (PET): A Positron emission tomography, also called PET imaging or a PET scan, is a diagnostic examination that involves the acquisition of physiologic images based on the detection of radiation from the emission of positrons. Positrons are tiny particles emitted from a radioactive substance administered to the patient. The subsequent images of the human body developed with this technique are used to evaluate a variety of diseases.

L. PET/CT (Combined) Imaging: In one scan, a PET/CT scanner combines two state of the art imaging modalities and merges PET and CT images together. By monitoring the body's metabolism, PET provides information of cell activity whether a growth within the body is cancerous or not. CT simultaneously provides detailed anatomic information about the location, size, and shape of various lesions and tissue.

M. Procedure / Suite Stop: A procedure / suite stop is one encounter of a patient with a healthcare provider. Per these criteria, the procedure / suite stop is the workload unit

of measure for space planning. One individual patient can have multiple procedure / suite stops in a single visit or in one day.

N. Program for Design (PFD): A space program based on criteria set forth in this document and specific information about Concept of Operations, Workload projections and Staffing levels authorized.

O. Radiobioassay: Utilizes specimens such as blood, urine, feces, spinal fluid etc, including biopsies that are received and/or collected from patients, evaluated and measured. Radioactive materials are incorporated in vivo or in vitro and determinations of body functions made. Specimen receiving, holding, preparation, examination, interpretation, consultation, record distribution, storage and retrieval occur in areas separate from the clinical imaging function.

P. Radionuclide / Radiopharmaceutical / Radioisotope: Terms, often but incorrectly used interchangeably, to describe the type of radioactivity administered to a patient , either diagnostic procedures or therapy. Different radioactive materials have an affinity for the varying physiologic processes (chemical or physical) of the body. Those radioactive substances employed for diagnostic testing/imaging have very low doses of radioactivity (gamma), enabling patients to be treated as outpatients and not require them to alter their normal activities. Therapeutic uses of radioactivity employ more highly radioactive materials (alpha and beta) and may, on a case-to-case basis, require inpatient stays and/or modification of normal activities.

Q. Room Efficiency Factor: A factor that provides flexibility in the utilization of a room to account for patient delays, scheduling conflicts, and equipment maintenance. Common factors are in the 80 to 85% range. A room with 80% room efficiency provides a buffer to assume that this room would be available 20% of the time beyond the planned operational practices of the room. This factor may be adjusted based on the actual and/or anticipated operations and processes of the room / department.

R. Scintillation or Gamma Camera: Nuclear imaging camera consisting of a collection crystal (head) and magnifiers that create images of a target organ / physiologic process from the gamma radiation being emitted from a patient following the administration of a radioactive material.

S. SEPS (VA-SEPS): Acronym for Space and Equipment Planning System, a digital tool developed by the Department of Defense (DoD) and the Department of Veterans Affairs to generate a Program for Design (PFD) and an Equipment List for a VA healthcare project based on specific information entered in response to Input Data Statements. VA-SEPS incorporates the propositions set forth in this chapter as well as all chapters in VA's Handbook 7610. VA-SEPS has been designed to aid healthcare planners in creating a space plan based on a standardized set of criteria parameters.

T. Single Photon Emission Computed Tomography (SPECT): Standard diagnostic imaging modality that usually employs a rotating collection crystal (head) and magnifiers to create three dimensional images from transaxial, coronal, sagittal

planes, of the distribution of a single photon gamma emitting radionuclide distributed in the body. The images of the varying dimensional relationships are computer generated resulting in improved resolution of target organs/processes.

U. Tele-Nuclear Imaging: In Nuclear Medicine computerized clinical data is acquired directly in digital format, obviating the need for conversion prior to electronic transmission. Tele-Nuclear medicine space requirements are determined by the functions of image acquisition or interpretation. Space requirements for image acquisition are those specified by the imaging and support areas. If the site is an interpretation site, additional space for computer equipment, such as servers and office space for computer staff (non-physician professionals) is indicated.

V. Workload: Workload is the anticipated number of procedures or suite stops that is processed through a department/service area. The total workload applied to departmental operational assumptions will determine overall room requirements by modality.

3 OPERATING RATIONALE AND BASIS OF CRITERIA

A. Workload projections or planned services / modalities for a specific VA medical center, hospital or satellite outpatient clinic project are provided by the VA Central Office (VACO) / VISN CARES Capacity Projection Model. Workload projections are generated by methodology based upon the expected veteran population in the respective market / service area. Health care planners working on projects for VA medical centers, hospitals or satellite outpatient clinics, shall utilize workload criteria set forth herein for identified services and modalities to determine room requirements and generate a space program for each project

B. Space planning criteria have been developed on the basis of an understanding of the activities involved in the functional areas of the Nuclear Medicine Service and their relationship with other services of a medical facility. These criteria are predicated on established and/or anticipated best practice standards as adapted to provide environments supporting the highest quality healthcare for Veterans.

C. These criteria are based on established and anticipated standards, which are subject to modification relative to development in the equipment, medical practice, vendor requirements, and healthcare planning and design developments. The final selection of medical equipment for the Nuclear Medicine Service is approved by VACO Radiology Service based upon Veterans Health Administration (VHA) anticipated medical needs.

D. Nuclear Medicine imaging space requirements are based on research by the Program Office, Nuclear Medicine & Radiation Safety Service, Diagnostic Service Strategic Healthcare Group, Patient Care Services and Health System Research & Development, and The Center for Performance Management in the Department of Veterans Affairs (VA) Central Office. These groups demonstrated that clinical imaging productivity was most closely related to the number of imaging devices.

E. Nuclear Medicine Services and PET/CT services, as used in these criteria, include the diagnostic imaging modality of Nuclear Medicine Services and PET/CT services.

F. Room capacity per year should be based on:

$$\frac{\text{Operating days per year x Hours of operation per day}}{\text{Minutes per procedure / 60 minutes}} = \text{Number of annual procedures}$$

1. The general planning model for VA facilities assumes 250 Operating Days per Year and 8 Hours of Operation per Day. Room capacity will fluctuate as hours of operation are modified, i.e., additional capacity may be generated by extending the daily hours of operation within the same physical setting.

2. Basic room use efficiency factor is 80%

   a. Modalities with routine, scheduled procedures and backup equipment (more) than one piece of the same type of equipment in the department) should plan for an efficiency factor of 85%.

   Example: Assume a modality room that averages 30 minute per procedure/suite stop:

$$\frac{\text{250 operating days per year x 8 hours of operation per day}}{\text{30 minutes per procedure / 60 minutes}} = \text{4,000 annual procedures}$$

   A maximum capacity of 4,000 procedure/suite stops per year, assuming 100% utilization. However, 100% utilization is not realistic to achieve, thus, it is not an accurate design standard. Apply Room Efficiency Factor:

   4,000 x 80% = 3,200 annual procedures.

   TABLE 1: WORKLOAD PARAMETER CALCULATION

PROCEDURE	AVERAGE LENGTH OF PROCEDURE (minutes)	ANNUAL PROCEDURES PER ROOM (rounded)	MINIMUM WORKLOAD TO GENERATE ONE ROOM
Nuclear Medicine Scanning Room	75	1,280	400
Bone Densitometry Room	20	4,800	1,440
PET/CT Scanning Room	45	2,130	640

   The number of annual procedures per room will be used as a criteria parameter to calculate the number of procedure rooms in the Space Criteria

section of this document. The minimum workload to generate one room is 30% of the calculated annual procedures per room.

4 PROGRAM DATA REQUIRED (INPUT DATA QUESTIONS)

A. Mission Input Data Statements

1. Is a Bioassay Unit authorized? (M)
2. Is a Cyclotron authorized? (M)
3. Is PACS authorized? (M)
4. Is a Biosafety / Health Physics Lab authorized? (M)
5. Is a Cardiac Stress Testing Room authorized? (M)
6. Is a Residency Program authorized? (M)

B. Workload Input Data Statements

1. How many annual Nuclear Medicine stops/procedures are projected? (W)
2. How many annual PET / CT stops/procedures are projected? (W)
3. How many annual Bone Densitometry stops/procedures are projected? (W)

C. Staffing Input Data Statements

1. How many administrative assistant positions are authorized? (S)
2. How many clerk / receptionist positions are authorized? (S)
3. How many secretary to Chief of Service positions are authorized? (S)
4. How many non physician professionals are authorized? (S)
5. How many schedulers are authorized? (S)
6. How many quality assurance positions are authorized? (S)
7. How many transcriptionist positions are authorized? (S)
8. How many physicist positions are authorized? (S)
9. How many PACS administrator positions are authorized? (S)
10. How many data processing administrative positions are authorized? (S)
11. How many staff physician positions are authorized? (S)
12. How many Assay Preparation FTE Technologist / Technician positions are authorized? (S)
13. How many Nuclear Medicine technology student positions are authorized? (S)
14. How many Nuclear Medicine resident intern positions are authorized? (S)

D. Miscelaneous Input Data Statements

1. How many FTEs for whom office space is not authorized? (MISC)
2. How many FTEs for whom lockers are authorized? (MISC)
3. How many male FTE positions are projected? (MISC)
4. How many female FTE positions are projected? (MISC)

5 SPACE CRITERIA

A. Reception Areas

1. **Waiting Area (WRC01).....100 NSF (9.3 NSM)**
Minimum NSF. Provide an additional 45 NSF per each additional NM Scanning Room, Bone Densitometry Room, and PET/CT Scanning Room greater than one.

   This area provides circulation and seating area for patients and visitors. The Waiting Room should be connected to the patient entrance corridor and be under visual control of the Nuclear Medicine Service receptionist.

2. **Reception (RECP1).....80 NSF (7.5 NSM)**
Minimum NSF. Add 10 NSF for each additional NM Scanning Room, Bone Densitometry Room, and PET/CT Scanning Room greater than one. Maximum of 160 NSF.

3. **Patient Education Kiosk / Alcove (CLSC1) .....30 NSF (2.8 NSM)**
Provide one per NM Service.

4. **Public Toilet (TLTU1).....50 NSF (4.7 NSM)**
Provide one for male and one for female.

B. Patient Areas

1. Nuclear Medicine (NM)

   a. **Sub-waiting (WRC01).....60 NSF (5.6 NSM)**
   Minimum NSF. Provide an additional 15 NSF per each NM Scanning Room, Bone Densitometry Room, and PET/CT Scanning Room greater than one.

   b. **Patient Interview Room (PAIA1).....120 NSF (11.2 NSM)**
   Provide one per NM Service.

   c. **NM Scanning Room (NMGS1) .....400 NSF (37.2 NSM)**
   Divide the projected number of annual procedures by 1,280; provide one room for each whole increment of 1280 and remainder of 400 or greater. Minimum annual workload to provide a room is 400 (see Table 1).

   d. **Computer Image Processing Area (NMCR1).....120 NSF (11.2 NSM)**
   Minimum NSF. Add 60 NSF per each additional NM Scanning Room, Bone Densitometry Room, and PET/CT Scanning Room. Maximum 240 NSF.

   e. **Data Processing Equipment (XFDS1).....120 NSF (11.2 NSM)**
   Provide one per NM Service.

      This space to house computer hardware.

   f. **Reading and Consultation Room (XVC01) .....120 NSF (11.2 NSM)**
   Minimum NSF. Provide one per two NM Scanning Rooms and Bone Densitometry Rooms greater than one.

g. **Patient Examination Room (EXRG1)..... 120 NSF (11.2 NSM)**
Provide one per NM Service.

h. **Patient Dose Administration (NMIR1) ..... 150 NSF (14.0 NSM)**
Provide one per NM Service.

Contains two reclining chairs and injection storage. This room must be in proximity to Patient Examination, Radiopharmacy, and Procedure Room(s). Most radiopharmaceuticals are administered to patients intravenously and both ambulatory and non-ambulatory patients will receive injections in this area.

i. **Thyroid Uptake Room (NMIR1)..... 100 NSF (9.3 NSM)**
Provide one per NM Service.

j. **NM "Hot Lab" / Radiopharmacy (NMRP1).....150 NSF (14.0 NSM)**
Minimum NSF. Add 60 NSF per NM Scanning Room greater than two. Maximum 240 NSF.

This area is for the storage, preparation and dispensing of radiopharmaceuticals.

k. **Cardiac Stress Testing Room (OPPE2) .....235 NSF (21.9 NSM)**
Provide one if in Concept of Operations.

This is a non-imaging procedure room. Tests may occur here or in the NM Scanning Room. Radioactive materials are added to specimens such as blood, urine, feces, spinal fluid, etc., that are collected from patients and evaluated and measured. Such procedures as total blood volume, red blood cell count, thyroid uptake and other non-imaging nuclear medicine procedures are performed in this space.

l. **NM Patient Toilet (TLTU1) ..... 50 NSF (4.7 NSM)**
Provide one per two NM Scanning Rooms.

m. **Dressing Room / Cubicle (DROO1) .....35 NSF (3.3 NSM)**
Provide one per every two NM Scanning Room and Bone Densitometry Room.

n. **Patient Stretcher Holding Bay (ORPP1).....80 NSF (7.5 NSM)**
Provide one per two NM Scanning Room and PET/CT Scanning Room.

This bay provides space for staging/observation of patients pre/post procedure.

o. **Bone Densitometry Room (XDBD1) .....160 NSF (14.9 NSM)**
Divide the projected number of annual procedures by 4,800; provide one room for each whole increment of 4,800 and remainder of 1,440 or greater. Minimum annual workload to provide a room is 1,440 (see Table 1).

2. Positron Emission Tomography (PET)

   a. **PET / CT Scanning Room (NMSS1)..... 450 NSF (41.8 NSM)**
   Divide the projected number of annual procedures by 2,130; provide one room for each whole increment of 2,130 and remainder of 640 or greater. Minimum annual workload to provide a room is 640 (see Table 1).

   b. **Control Room (NMRCR1) ..... 120 NSF (11.2 NSM)**
   Provide one per PET / CT Scanning Room.

   a. **System Component Room (XMRC2) ..... 120 NSF (11.2 NSM)**
   Provide one per PET / CT Scanning Room.

   c. **Radio Chemistry Room (NMRP1)..... 750 NSF (69.7 NSM)**
   Provide one per PET / CT Scanning Room.

   d. **Cyclotron (XTLA1) ..... 750 NSF (69.7 NSM)**
   Provide one per PET / CT Scanning Room and if in Concept of Operations..

   e. **PET Reading / Staff Consultation Room (XVC01)..... 120 NSF (11.2 NSM)**
   Provide one per PET / CT Scanning Room.

   f. **Dressing Room / Cubicle (DR001) ..... 35 NSF (3.3 NSM)**
   Provide one per every two PET / CT Scanning Rooms.

   g. **Patient Toilet (TLTU1)..... 50 NSF (4.7 NSM)**
   Provide one per PET / CT Scanning Room.

   h. **Patient Stretcher Holding Bay (ORPP1) ..... 80 NSF (7.5 NSM)**
   Provide one per two PET / CT Scanning Rooms.

   This bay provides space for staging/observation of patients pre/post procedure.

3. Bioassay Unit (Radioimmunoassay)

   Provide only if not established in Pathology and Laboratory Medicine Service.

   a. **Receiving, Preparation, Data Reduction and Reporting (LBRI1)..... ..... 180 NSF (16.8 NSM)**
   Provide one if in Concept of Operations.

   b. **Assay Preparation (LBRI1)..... 60 NSF (5.6 NSM)**
   Provide one per FTE technologist / technician authorized and if in Concept of Operations.

   c. **Biohazard Preparation (LBRI1) ..... 100 NSF (9.3 NSM)**

Minimum NSF. Provide an additional 25 NSF per each NM Scanning Room and PET / CT Scanning Room greater than three. Maximum 175 NSF and if in Concept of Operations.

d. **Sample Counting, Measurement (LBRI1).....120 NSF (11.2 NSM)**
Minimum NSF. Provide an additional 30 NSF per each NM Scanning Room and PET / CT Scanning Room greater than three. Maximum 180 NSF. If in Concept of Operations.

C. Support Areas

1. **Staff Work Area (WRCH1).....80 NSF (7.5 NSM)**
Minimum NSF. Provide an additional 30 NSF per each NM Scanning Room and PET/CT Scanning Room greater than two.

2. **Equipment Storage, Mobile (XRM01).....80 NSF (7.5 NSM)**
Provide one per NM Service.

3. **Storage, Refrigerated (SRR02).....40 NSF (3.8 NSM)**
Minimum NSF. Provide an additional 20 NSF per NM Scanning Room, Bone Densitometry Room, and PET / CT Scanning Room greater than three.

   This area is required to provide controlled temperature storage for temperature sensitive reagents, kits and biologic samples.

4. **PACS / Digital Quality Control Area (XVC01) .....100 NSF (9.3 NSM)**
Provide one if in Concept of Operations.

5. **PACS / Digital Archival Storage Room (XFDS1) ..... 80 NSF (7.5 NSM)**
Provide one if in Concept of Operations.

   This room is utilized for the archiving of digital media. Shelving and a computer terminal without a printer may be located in this room.

6. **Patient Film Records *(XFSA1).....480 NSF (44.6 NSM)***
Minimum NSF. Provide an additional 40 NSF per NM Scanning Room, Bone Densitometry Room, and PET / CT Scanning Room greater than three. Maximum 600 NSF. If in Concept of Operations.

7. **Patient Treatment Files (XFDS1).....285 NSF (26.5 NSM)**
Minimum NSF. Provide an additional 25 NSF per NM Scanning Room, Bone Densitometry Room, and PET / CT Scanning Room greater than three and if in Concept of Operations.

8. **Biosafety / Health Physics Lab (XTLB1).....150 NSF (13.9 NSM)**
Minimum NSF. Provide an additional 30 NSF per NM Scanning Room greater than three, and if in Concept of Operations.

9. **Radioactive Waste Storage Room (NMDC1) .....120 NSF (11.2 NSM)**

Provide one per NM Service.

10. **Equipment Calibration (NMUR1).....120 NSF (11.2 NSM)**
Provide one per NM Service.

11. **Crash Cart Alcove (RCAO1).....20 NSF (1.9 NSM)**
Provide one per NM Service.

12. **Clean Supply Room (SRSE1) .....100 NSF (9.3 NSM)**
Provide one per NM Service.

13. **Soiled Utility Room (USCL1) ..... 80 NSF (7.5 NSM)**
Provide one per NM Service.

14. **Housekeeping Aids Closet – HAC (JANC1) ..... 40 NSF (3.8 NSM)**
Provide one per NM Service.

15. **Linen Storage Alcove (LLCL1) ..... 20 NSF (1.9 NSM)**
Provide one per NM Service

16. **Stretcher/ Wheelchair Storage (SRLW1) ..... 40 NSF (3.8 NSM)**
Provide one per NM Service

D. Staff and Administrative Areas

Administrative offices should be arranged to allow grouping of key administrative and management staff, to permit the Chief of Service, Administrative Assistant, and Secretary to the Chief to be adjacent

1. **Office, Chief of Service (OFDR1) .....150 NSF (13.9 NSM)**
Provide one per NM Service.

   May also function as Bioassay Office.

2. **Office, Staff Physician (OFDR1) .....120 NSF (11.2 NSM)**
Provide one per FTE position authorized.

3. **Office, Secretary to Chief of Service (SEC01).....120 NSF (11.2 NSM)**
Minimum NSF. Provide an additional 80 NSF for each FTE authorized greater than one.

   In addition to the reception of visitors, this space will accommodate the storage of service files, records, inspection and quality control manuals, credentials, files, etc.

4. **Office, Clerk Receptionist (RECP1) .....120 NSF (11.2 NSM)**
Provide one per FTE position authorized.

5. **Office, Administrative Assistant (OFA01) .....120 NSF (11.2 NSM)**

Provide one per FTE position authorized.

6. **Office, Chief Technologist (OFA01) ..... 120 NSF (11.2 NSM)**
   Provide one per NM Service.

7. **Office, Non-Physician Professional (OFA01) .....120 NSF (11.2 NSM)**
   Provide one per FTE position authorized.

   One office is for Radiopharmacist.

8. **Office, Physicist (OFA01) .....120 NSF (11.2 NSM)**
   Provide one per FTE position authorized and if in Concept of Operations.

   Typically associated with the Safety Office Program.

9. **Office, Cyclotron Operator (OFA01).....120 NSF (11.2 NSM)**
   Provide one if in Concept of Operations.

10. **Cubicle, Clerical Employee (OFA03).....64 NSF (5.96 NSM)**
    Provide one per NM Service.

11. **Office, PACS Administrator (OFA01)..... 120 NSF (11.2 NSF)**
    Provide one per FTE position authorized and if in Concept of Operations.

12. **Office, Quality Assurance (OFDR1) .....120 NSF (11.2 NSM)**
    Provide one per FTE position authorized.

13. **Cubicle, Data Processing (OFA03).....64 NSF (5.96 NSM)**
    Provide one per FTE position authorized and if in Concept of Operations.

14. **Cubicle, Scheduler (OFA03) .....64 NSF (5.96 NSM)**
    Provide one per FTE position authorized.

15. **Cubicle, Transcriptionist (OFA03) .....80 NSF (7.5 NSM)**
    Provide one per FTE position authorized.

16. **Tele-Nuclear Medicine Office (XVC01).....120 NSF (11.2 NSM)**
    Provide one per NM Service.

    Required for interpretive sites only. Not required if included with Radiology Services.

The methodology below (17., 18., 19.) provides programming of Lounge, Lockers, Toilets at department/service/chapter level. Alternatively, sum all departments/services/chapters data for Lockers, Lounges and Toilets, and program space in Chapter 410-EMS Lockers, Lounges, Toilets and Showers. *Either/or – do not duplicate space in both this Chapter and Chapter 410.*

17. **Staff Lounge (SL001) ..... 160 NSF (14.9 NSM)**
Provide a minimum of 160 NSF; or 15 NSF for each FTE position authorized for whom lockers are provided, whichever is greater.

18. **Staff Lockers (LR001) ..... 6 NSF (.6 NSM)**
Per FTE position authorized for whom office space is not provided.

19. **Staff Toilet (TLTU1) ..... 50 NSF (4.7 NSM)**
Divide the total male FTE positions authorized by 20. Provide one male toilet for each whole increment. Minimum of 6 authorized male FTE positions to provide a separate male toilet. Divide the total female FTE positions authorized by 15. Provide one female toilet for each whole increment. Minimum of 5 authorized female FTE positions to provide a separate female toilet. Minimum of 1 combined male/female staff toilet.

E. Residency Program

The methodology below provides programming of educational facilities at department/service/chapter level. Alternatively, sum all departments/services/chapters data for educational facilities and program space in Chapter 402- Educational Facilities. *Either/or – do not duplicate space in both this Chapter and Chapter 402.*

Office space for residents should be grouped on one area close to staff physicians.

1. **Office, Educational Coordinator (OFA01) ..... 120 NSF (11.2 NSM)**
Provide one if in Concept of Operations.

2. **Cubicle, Resident Intern (OFA03) ..... 64 NSF (5.9 NSM)**
Provide one per resident position authorized and if in Concept of Operations.

3. **Cubicle, Student (OFA03) ..... 30 NSF (2.8 NSM)**
Provide one per student position authorized and if in Concept of Operations.

4. **Office, NM Technology Student (OFA02) ..... 60 NSF (5.6 NSM)**
Provide one if in Concept of Operations.

5. **Student Laboratory / Classroom (CLR01) ..... 40 NSF (3.7 NSM)**
Provide one per student position authorized and if in Concept of Operations.

6 PLANNING AND DESIGN CONSIDERATIONS

A. Net-to-department gross factor **(NTDG)** for **Nuclear Medicine** is **1.50**. This number, when multiplied by the programmed net square foot (NSF) area, determines the departmental gross square feet (DGSF).

B. All procedure and computer support areas should be planned with flexibility to accommodate the rapid technological improvements occurring in this field. When possible, all areas should be on one floor and contiguous.

C. PET/CT in this service, when possible, should be co-located immediately adjacent to other CT areas in order to facilitate the use of both Nuclear Medicine techs and CT technicians.

D. Data processing room shall be enclosed to ensure temperature and humidity controls. Raised flooring shall be installed as required.

E. Special considerations (hood and stack ventilation) will be necessary for installation and placement of exhaust systems for venting radioactive gas, and for bio-hazardous material testing.

F. The structural system must be carefully reviewed for live load requirements, particularly in the Patient Treatment Files and Patient Film Records areas if there is no Picture Archiving Computer System (PACS) system and in those facilities with PET/CT capacity that includes an on-site cyclotron.

G. Nuclear Imaging rooms need to have an emergency power supply to complete in-process nuclear scans.

7 **FUNCTIONAL RELATIONSHIP** MATRIX

Relationship of Nuclear Medicine Service to services listed below.

TABLE 2: INTERFUNCTIONAL RELATIONSHIP MATRIX

SERVICE	RELATIONSHIP
Radiology Service – Main Suite	2
Laboratory Service	2
Ambulatory Care	3
Nursing Service - CCU	3
Nursing Units - ICU	3
Nursing Units – MS&N	3
Nursing Units - Respiratory	3
Audiology & Speech Pathology	X
Canteen/Dining Facility	X
Dietetic Service	X
Laboratory Service	X
Rehabilitation Medicine	X

Legend:

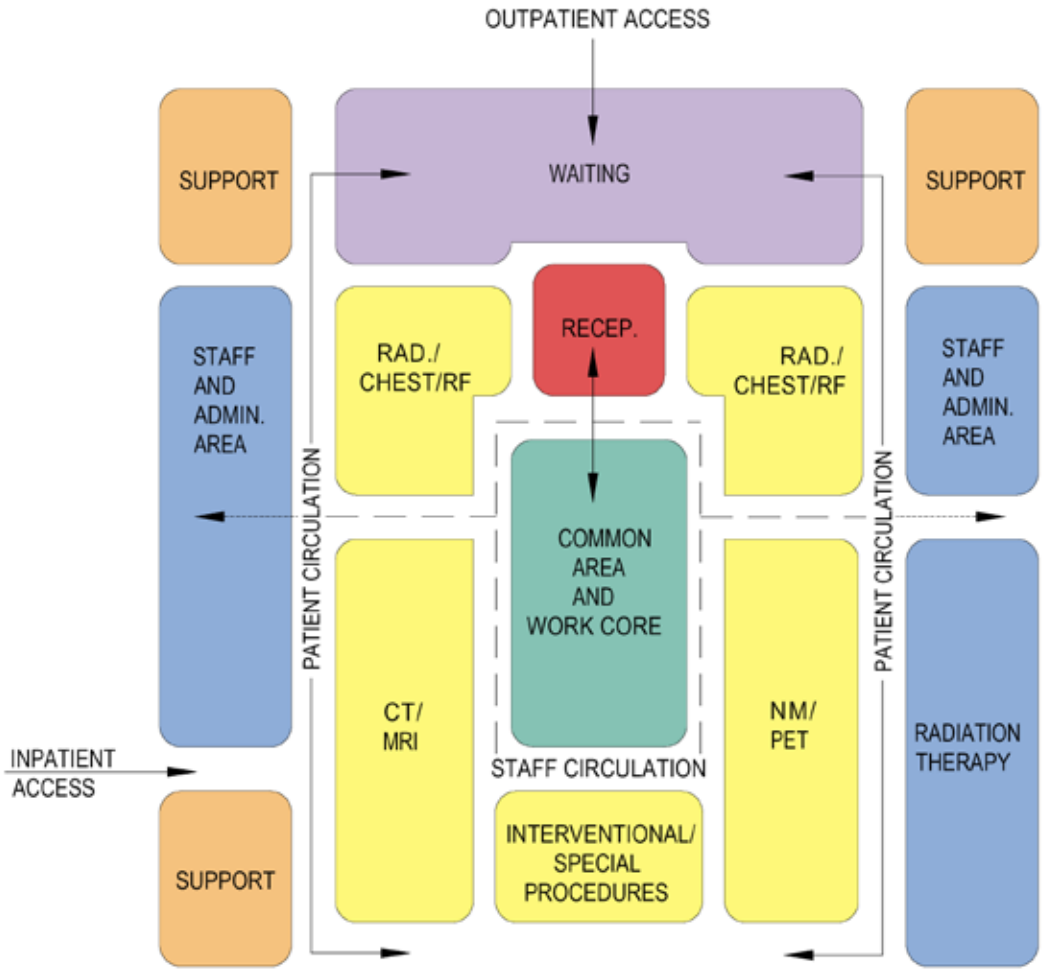
1. Adjacent
2. Close/Same Floor
3. Close/Different Floor Acceptable
4. Limited Traffic

X. Separation Desirable

Reasons:

A. Common use of resources
B. Accessibility of supplies
C. Urgency of contact
D. Noise or vibration
E. Presence of odors or fumes
F. Contamination hazard
G. Sequence of work
H. Patient convenience
I. Frequent contact
J. Need for security
K. Closeness inappropriate

8 FUNCTIONAL DIAGRAM 1: Radiology Service Area Relationship by Modality



9 FUNCTIONAL DIAGRAM 2: Nuclear Medicine Area Relationship