# Table of Contents

<table>
<thead>
<tr>
<th>Topic/Area</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents Listing</td>
<td>1 - 2</td>
</tr>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Methodist Healthcare’s Mission Statement</td>
<td>4</td>
</tr>
<tr>
<td>Program Mission Statement, Goals, and Objectives</td>
<td>5</td>
</tr>
<tr>
<td>Technical Standards</td>
<td>6</td>
</tr>
<tr>
<td>Admission Criteria</td>
<td>7-8</td>
</tr>
<tr>
<td>Program’s Educational Credentialing</td>
<td>9</td>
</tr>
<tr>
<td>Program Costs: Tuition - Books - Fees</td>
<td>9</td>
</tr>
<tr>
<td>Program Policies</td>
<td></td>
</tr>
<tr>
<td>- Address Changes</td>
<td>10</td>
</tr>
<tr>
<td>- Appeals Process</td>
<td>10</td>
</tr>
<tr>
<td>- Attendance</td>
<td>11-12</td>
</tr>
<tr>
<td>- Classroom Requirements</td>
<td>13</td>
</tr>
<tr>
<td>- Disciplinary Appeal</td>
<td>13</td>
</tr>
<tr>
<td>- Dismissal</td>
<td>13</td>
</tr>
<tr>
<td>- Dress Code</td>
<td>13</td>
</tr>
<tr>
<td>- Due Process Policy</td>
<td>14</td>
</tr>
<tr>
<td>- Employee Assistance Program (EAP) and Area Crisis Numbers</td>
<td>15</td>
</tr>
<tr>
<td>- Failure to Report</td>
<td>16</td>
</tr>
<tr>
<td>- Funeral Leave</td>
<td>16</td>
</tr>
<tr>
<td>- Grade Appeal</td>
<td>16</td>
</tr>
<tr>
<td>- Grade Requirements</td>
<td>17</td>
</tr>
<tr>
<td>- Graduation Requirements</td>
<td>17</td>
</tr>
<tr>
<td>- Identification Badges</td>
<td>18</td>
</tr>
<tr>
<td>- Inclement Weather Policy</td>
<td>18</td>
</tr>
<tr>
<td>- Library Resources</td>
<td>18</td>
</tr>
<tr>
<td>- Lunch Period</td>
<td>18</td>
</tr>
<tr>
<td>- Non-discrimination Policy</td>
<td>18</td>
</tr>
<tr>
<td>- Pregnancy Policy</td>
<td>19</td>
</tr>
<tr>
<td>- Professional Conduct</td>
<td>20</td>
</tr>
<tr>
<td>- Professional Organizations</td>
<td>20</td>
</tr>
<tr>
<td>- Radiation Exposure Monitoring</td>
<td>20</td>
</tr>
<tr>
<td>- Reporting Accidents</td>
<td>21</td>
</tr>
<tr>
<td>- Reporting Illness</td>
<td>21</td>
</tr>
<tr>
<td>- Required Health Insurance</td>
<td>21</td>
</tr>
<tr>
<td>- Resignations [Withdraw from program]</td>
<td>22</td>
</tr>
<tr>
<td>- Student Awards</td>
<td>22</td>
</tr>
<tr>
<td>- Student Employment</td>
<td>22</td>
</tr>
<tr>
<td>- Student Health Services</td>
<td>23</td>
</tr>
<tr>
<td>- Student Housing</td>
<td>23</td>
</tr>
<tr>
<td>- Student Records</td>
<td>23</td>
</tr>
<tr>
<td>- Student Supervision</td>
<td>24</td>
</tr>
<tr>
<td>- Tuition Refund</td>
<td>24</td>
</tr>
<tr>
<td>- Vacation</td>
<td>24</td>
</tr>
<tr>
<td>Topic</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Disciplinary Action Grid</td>
<td>25</td>
</tr>
<tr>
<td>Holiday Vacation Schedule</td>
<td>26</td>
</tr>
<tr>
<td>Overview of Clinical Education</td>
<td>27</td>
</tr>
<tr>
<td>Clinical Practicum Education</td>
<td>28-29</td>
</tr>
<tr>
<td>- Clinical Facilities: Address - Phone Number - Clinical Instructor List</td>
<td></td>
</tr>
<tr>
<td>- Sample Rotation Schedules</td>
<td>30</td>
</tr>
<tr>
<td>Clinical and Imaging Competency</td>
<td>31</td>
</tr>
<tr>
<td>- Practical Competencies (Mandatory and Eletive)</td>
<td>31-36</td>
</tr>
<tr>
<td>APPENDICES</td>
<td></td>
</tr>
<tr>
<td>SNM-TS-Code of Ethics</td>
<td>37</td>
</tr>
<tr>
<td>SNM Scope of Practice</td>
<td>38-40</td>
</tr>
<tr>
<td>NMTCB-Components of Preparedness</td>
<td>41-43</td>
</tr>
<tr>
<td>NMTCB-Task List*</td>
<td>44</td>
</tr>
<tr>
<td>NMTCB-Procedures List*</td>
<td>45-46</td>
</tr>
<tr>
<td>NMTCB-Equipment List*</td>
<td>47</td>
</tr>
<tr>
<td>NMTCB-Pharmaceuticals List*</td>
<td>48-49</td>
</tr>
<tr>
<td>NMT Program Courses Taught</td>
<td>50</td>
</tr>
</tbody>
</table>
Student Handbook

Introduction

On behalf of the entire program staff, welcome to the Methodist University Hospital School of Nuclear Medicine Technology! We are glad you are here and look forward to working with you over the next 12 months as you strive to acquire the didactic knowledge and develop the clinical skills needed to become a Nuclear Medicine Technologist.

The next 12 months will be challenging to say the least. You will see many new and exciting things. Through the application and correlation of both classroom and clinical experiences, I believe you will discover how interesting, intense, and truly dynamic Medical Imaging, Nuclear Medicine specifically, really is.

During the course of the program you will move from being strictly an observer in the early weeks of the program to becoming the primary 'imager'.

The level of supervision you will encounter over the 12 month program will change as you expand your didactic knowledge and develop/refine your patient care and clinical imaging skills. In the beginning, you will be strictly an observer and all your clinical activities will be closely monitored and supervised by NMT/MD staff. As skills develop and you are able to demonstrate competency, you will become a much more active imaging participant and your activities will require decreasing levels of supervision.

Remember, your clinical and didactic instructors are here to help you as you make this journey into the world of Nuclear Medicine Technology. Let us know when and how we may be of assistance.

Congratulations on your acceptance into the program and welcome to Nuclear Medicine!

Program Director
Methodist University Hospital
School of Nuclear Medicine Technology
Methodist Healthcare's
Mission Statement

Methodist LeBonheur Healthcare, in partnership with its medical staffs, will collaborate with patients and their families to be the leader in providing high quality, cost-effective patient and family centered care. Services will be provided in a manner, which supports the health ministries and Social Principles of The United Methodist Church to benefit the communities we serve.

Vision Statement

Methodist LeBonheur Healthcare is a faith-based healthcare system that, in partnership with its physicians, will be nationally recognized for providing outstanding care to each patient, achieved through collaboration with patients and their families.

Values

1. We will provide service that exceeds expectations with respect, professionalism and a spirit of caring.

2. We are dedicated to providing the highest quality of care through our consistent delivery of the best practices, continuous learning and improvement.

3. Our behavior will be based on fair treatment and the highest ethical standards, reflecting the trust placed in us by our patients.

4. We will foster a culture of collaboration, accountability and dependability with a strong commitment to diversity.
Mission Statement

Methodist University Hospital’s Nuclear Medicine Technology Educational Program, in partnership with its medical, technical, and educational staff, will prepare students to graduate with above-average entry-level competency in Nuclear Medicine Technology.

In addition, students will be taught and encouraged to provide effective, compassionate care to all patients throughout their careers. The clinical and didactic educational experiences will be in accordance with the Essentials and Guidelines for an Accredited Educational Program for the Nuclear Medicine Technologist, thus qualifying the student to sit for nationally recognized examinations.

GOALS

1. To provide Methodist Healthcare institutions and surrounding communities with qualified Nuclear Medicine Technologists.

2. To provide the community with Nuclear Medicine Technologists who are knowledgeable, flexible and adaptable in clinical situations and will provide excellent healthcare.

OBJECTIVES

The Methodist University Hospital - School of Nuclear Technology will:

- Enroll qualified students in the program who possess motivation and potential for successful practice of Nuclear Medicine technology.

- Facilitate development of applied skills in effective communication, critical thinking, and problem solving in the practice of Nuclear Medicine technology.

- Provide clinical experiences that complement didactic instruction, and develop clinical skills required for professional practice.
Technical Standards

To perform the duties and responsibilities of a Nuclear Medicine Technologist and to be granted final admission into the Methodist School of Nuclear Medicine Technology, the prospective student must meet the following standards:

- In order to determine visual image quality, the student must possess the visual ability to:
  1. Differentiate subtle shades of gray and colors.
  2. Conceptually visualize human anatomy in both 2 and 3 dimensions.

- In order to properly prepare and/or administer radionuclides, radiopharmaceuticals, and/or [when applicable] appropriate interventional agents, the student must have the manual dexterity and ability to develop the skills that would enable the student to accurately prepare, reconstitute, and withdraw appropriate patient doses.
Methodist University Hospital
School of Nuclear Medicine Technology

Admissions Criteria:

Maximum enrollment capacity is 12 students per year. Students are selected in April and admitted to the program in May of each year. Applications may be obtained from the School of Nuclear Medicine Technology by calling, writing, or visiting our website - www.methodisthealth.org:

Wendy Blankenship, Program Director & Chief Instructor
Methodist University Hospital - School of Nuclear Medicine Technology
1265 Union Avenue • Memphis, TN 38104
(901) 516-8099 blankenw@methodisthealth.org

Applications are accepted for consideration from Dec 1st through postmark of March 1st of the year of application.

The following are requirements and procedures for application and/or FINAL acceptance into the Methodist University Hospital - School of Nuclear Medicine Technology:

Candidate must:
1. Submit a completed application ensuring all information is accurate and thorough.
   A. Be at least 18 years of age.
   B. Be a graduate of an accredited program in Radiologic Technology
   C. Be a registered or registry-eligible Radiologic Technologist
   D. Satisfy and provide proof of all published didactic pre-requisites

2. Submit official copies of transcripts from R.T. program and ALL post-secondary education.

3. Report for and complete scheduled interviews with the Educational Program's Admissions Committee.

4. Notify Program Director, as directed and in timeframe required, of acceptance of student position and intention to begin program in May of specified year.

5. Submit to and pass a physical examination and drug screen as administered by the Associate Health Department of Methodist University Hospital.

6. Applicant must be in satisfactory physical, mental, and emotional health as determined by Methodist University Hospital Associate Health Department.

7. Meet the technical standards for performing the duties of the Nuclear Medicine Technologist as established by the Administration of the School of Nuclear Medicine Technology.

8. Assure that three reference letters are received by the School by stated deadline.

9. Assure all the above mentioned materials are received by the School of NMT by stated deadline.
10. In the event an applicant has been or is employed by Methodist Healthcare, he/she must have a positive rehire eligibility status in order to gain final acceptance into the NMT program.

11. Applicants who meet the above requirements will be informed of acceptance for consideration of admission. Those who do not meet the requirements will be notified as well.

12. An equal opportunity is offered to each applicant regardless of sex, race, religion, or origin.
Program's Educational Credentialing

Methodist University Hospital's School of Nuclear Medicine Technology is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine.

Upon graduation, a certificate-of-completion is awarded. This certificate, along with the signature of the Program Director, entitles the graduate to sit for national Registration/Certification examinations in Nuclear Medicine Technology.

Methodist University Hospital Schools of Radiologic Science and Imaging has a document of articulation with the Arkansas State University Radiologic program. With a minimal 2.0 cumulative GPA, graduates from the Methodist program will document 34 credit hours at ASU toward the Bachelor of Science degree*.

This articulation agreement is subject to change without notice.

* These hours are in addition to any other hours awarded for Radiologic Technology programs.

Program Costs

Tuition:

$4,500 for the 12 month J RCNMT - Accredited Program
- Monthly payments of $375.00 will be due on the 15th of each month.
- Tuition should be paid in full by May 6th. Failure to pay all debts to NMT School will result in not being eligible to sit for boards.

Books:

- Approximately $800 for all books and related educational materials
- Students must independently purchase ALL required books prior to the beginning of classes

Fees:

- $ 25 (approximately) for required liability insurance
- $ 50 non-refundable Application fee
- $150 non-refundable Student Activities Fee

NOTE

Methodist University Hospital
School of Radiologic and Imaging Sciences
is NOT accredited for title IV funding
Program Policies

Address Changes - Policy:
The Program Director is to be notified IN WRITING within one week following a change of name, address, phone number, or e-mail address.

Appeals Process - Policy:
The School of Nuclear Medicine Technology has established an Appeals Board for resolving any grading and/or disciplinary concern(s) or question(s) that may arise from any student.

The seven (7) member Appeals Committee will meet on an “as-needed” basis, in the event a student chooses to appeal an administrative decision or action. The Committee will arbitrate a final and binding decision in accordance with the established policies and procedures for the Methodist University Hospital School of Nuclear Medicine Technology.

Any student may present a written appeal for a grading and/or disciplinary action or question. Written appeals must be submitted within one (1) week of the actual event.

To initiate the process, the student must present three (3) signed originals of his/her written appeal. All three (3) originals must be submitted to either the School’s Program or Medical Director within one (1) week of the actual event. The written appeal should include the following as related to the event/occurrence in question:

- Date of event
- Date of Appeal’s presentation to School’s Program or Medical Director
- Student’s detailed account/description/explanation of the event
- Any collaborative information or documentation the student would like taken into account

The Committee will convene within two (2) weeks from the date the written appeal is presented. At that time, committee members will review all information submitted, conduct face-to-face interviews with involved parties, and review faculty’s written rebuttal, school policies, etc. After private discussions among members, the Committee will formulate a final decision.

Decisions of the Committee are final.

Candidates will be notified, in writing, regarding the Committee’s decision.
Attendance, Tardy and Absence Reporting - Policy:

Regular attendance is an essential expectation of a Nuclear Medicine technologist in order to provide quality patient care. Absenteeism and tardiness become undesirable habits that are unfortunately very difficult to change. This policy is established to ensure prompt and regular attendance by the student and to provide uniform guidelines for monitoring and supervising absence.

1) All students will be in the Clinical or Didactic education center from 8:00 a.m. until 4:00 p.m., Monday through Friday.

2) The Program Director is responsible for upholding school standards as outlined in this policy and responsible for maintaining records of attendance. If the student's attendance becomes unsatisfactory, the attendance record will be reviewed and progressive counseling will result.

3) Each student will be allowed five (5) days of absence for sickness. All days missed beyond these five sick days will be deducted from annual vacation time assigned by the Program Director; all days must be made up beginning with the first day of vacation. An absence is considered to be any time a student is not in his/her assigned area. The only exceptions will be if the student is sent home by Associate Health or if the student is hospitalized. These occurrences will need discussion between the program director and the student. If a student is sent home by Associate Health, he/she must present a physician’s note specifying the date of return. The student must check back in through Associate Health before returning to clinical rotation.

4) Exclusions from the attendance policy standards are limited to:

   A. State of Emergency designated by the Program Director  
   B. Jury Duty  
   C. Military Leave (exchanged for vacation time)  
   D. Scheduled Vacation  
   E. Holidays (except when absent the day before or after without advance permission of the Program Director)  
   F. Professional Leave

5) See Failure to Report Policy. Failure to report is failing to notify the Program Director of intent to be tardy or absent. If the Program Director is not available you must contact the Administrative Assistant. The notification must be made by a phone call, and that notification must be made BY 8:30 A.M. FOR EACH DAY OF TARDY OR ABSENCE. A phone message left with anyone else is NOT acceptable. The School and the assigned clinical site need to know of a student's intention to be absent or tardy. Failure to report is a serious offense and will result in progressive corrective action.
   • First - failure to report will result in the student being placed on a 1-day suspension.
   • Second - failure to report will result in 3-day suspension
   • Third – failure to report will result in termination from the education program.
6) If the student is absent the day before or the day after a holiday, without advance permission, the holiday will be counted as a day of absence also.

7) An official attendance record will be maintained on each student and is subject to periodic review. These records will be available to your future employers if the student signs an information release when applying for employment.

8) Continued absence calls for the following response:

<table>
<thead>
<tr>
<th>Days of Absences</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-6</td>
<td>Written warning</td>
</tr>
<tr>
<td>7-9</td>
<td>Second written warning</td>
</tr>
<tr>
<td>10</td>
<td>Termination from the program</td>
</tr>
</tbody>
</table>

9) The possibility exists for highly unusual or extraordinary circumstances to warrant a special review of the attendance policy. In such cases, the Program Director reserves the right to make exceptions to the policy.

10) Any student acquiring an absence period on the day of a scheduled quiz, test, or examination must have prior approval of the Program Director or Clinical Coordinator. Students will be allowed to take the quiz, test, or examination; however, a deduction of ten points will be assessed against the actual grade received.

11) Regular class attendance is the student's obligation, and the student is responsible for all work including tests, and written work of all class meetings. No rights or privileges exist which permits a student to be absent from any given number of class meetings. The Schools of Radiologic Sciences and Imaging gives each instructor the authority to regulate attendance for his/her class. Instructors will keep attendance records in each class. If a student misses three consecutive classes, or misses more class time than the instructor deems advisable, the instructor will report these facts to the Program Director for appropriate action. A student may be dismissed from the educational program for missing three consecutive class periods. If a student is absent from class on the day of a scheduled test, he/she will be expected to take that test during the next class meeting. 10 points will automatically be deducted from the test grade. Students will be allowed to make-up one test per course (Instrumentation, Procedures 109, Physics . . ). If a student misses a second test he/she will receive a “0” grade for that test. Exception to this policy will be made for those students who have an unavoidable conflict and make arrangements with the instructor to take a scheduled test in advance.

12) Tardiness is defined as arriving after 8:00 a.m. to the center for the beginning of the day or leaving the clinical center between 3:00 and 4:00 p.m. at the end of the day. The Program Director is responsible for maintaining records relating to tardiness. Continued tardiness calls for the following responses:

<table>
<thead>
<tr>
<th>Tardies</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Tardy Periods</td>
<td>Written Warning</td>
</tr>
<tr>
<td>6 Tardy Periods</td>
<td>Termination from school results on the 6th tardy period</td>
</tr>
</tbody>
</table>
**Classroom Requirements - Policy:**

The following standards are mandatory for all classes/didactic activity in this program.

1) **Dress Code:** Uniforms will be worn when reporting to class.
2) Students will be prompt to class, no tardiness is allowed.
3) Talking to classmates during class will not be tolerated.
4) No eating, drinking, or smoking in the classroom.
5) No sleeping during class. This will result in dismissal from the class period.

**Disciplinary Appeal - Policy:**

Any student may present in writing to the Program Director an appeal for any disciplinary action. Written appeals must be submitted within one week following the actual date of the action. The appeals board will be advised to convene for a decision within two weeks of the appeal submission date. Where legal criminal issues are concerned, the Program Director will follow hospital administrative channels.

**Dismissal - Policy:**

The Methodist University Hospital School of Nuclear Medicine Technology reserves the right to dismiss any student, at any time, for any or all [but not limited to] the following infractions:

1. Insubordination at any time.
2. Failure to maintain a passing grade point average in either didactic or clinical practicum areas.
3. Failure to develop those qualities considered essential for the ethical practice of NMT.
4. Failure to follow any and all procedures of the Methodist University Hospital School of Nuclear Medicine Technology.
5. Unsatisfactory performance in either didactic or clinical practicum areas.

Documentation of a student’s dismissal action(s) will be placed in the student’s permanent school records.

The student has a right to file an appeal as stated in the “Appeals Process” Section.

**Dress Code - Policy:**

- **Uniforms:**
  1. White, long-sleeved, knee-length lab coats are required to be worn at all times.
  2. **Navy** scrub pants and top. Plain-white T-shirt may be worn under scrub top.
  3. While ‘traditional styled nursing shoes’ are not required, comfortable walking shoes are suggested.
  4. No sling-back or open-toed footwear, sandals, thongs, or flip-flops are allowed at any time.
- Jewelry should be kept to a minimum and in good taste.
- Two earrings per ear are permitted. No visible body-piercing jewelry is permitted to be worn at any time including tongue piercing.
- Fingernails are to be kept at a medium to short length.
- Artificial nails, or nail tips should not be worn.

- No perfume or cologne use is allowed in either clinical or didactic settings.

- No ‘head gear’ of any kind, hats, or visors are permitted to be worn during didactic or clinical activities.

**Due Process Policy:**

The School of Nuclear Medicine Technology has established an appeals board for resolving grading and disciplinary questions that may arise from a student. The appeals board shall consist of the following members:

<table>
<thead>
<tr>
<th><strong>Member</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The SNMT Medical Director</td>
</tr>
<tr>
<td>The SNMT Program Director</td>
</tr>
<tr>
<td>The MUH Radiology Dept. Manager</td>
</tr>
<tr>
<td>One Student NMT Representative</td>
</tr>
<tr>
<td>One Senior Level Staff NMT</td>
</tr>
<tr>
<td>One Clinical Instructor</td>
</tr>
<tr>
<td>One At-Large Faculty Member of alternate hospital allied health education program</td>
</tr>
</tbody>
</table>
**Employee Assistance Program (EAP) - Policy and Program:**

Through the Employee Assistance Program, Methodist University Hospital provides a major benefit to Associates and family members by making available independent and objective assistance and referral for marital, family, pastoral, legal, financial, emotional, and chemical dependency problems. The EAP staff is dedicated to maintaining absolute confidentiality and you may be assured that no one other than the EAP coordinator has access to information pertaining to your inquiry or use of services without your permission and/or in those situations when problems are life threatening.

This confidential, self-referral service is available, at no charge, to all students of the Methodist University School of Nuclear Medicine Technology. To contact EAP services, call 901-683-5658

**Area CRISIS Numbers**

The Memphis and Shelby County Library's general information number is 901-415-2717. For information on health and social welfare problems, call LINC at 901-415-2700.

**For specialized help:**

- Alcohols Anonymous: 454-1414
- Cancer Hotline: 523-7663
- Child Abuse, Neglect: 529-7120
- City Information and Complaint Center: 576-6500
- County Assistance Center: 576-4585
- Emergency Utility Bill Assistance: 576-4630
- Deaf Interpreting: 327-4233
- Emergency Medical Services: 523-1313
- Emergency Mental Health Services: 577-9400
- Family Service: 324-3637
- Mental Health Information: 272-1111
- Memphis Alcohol and Drug Council: 274-0056
- Narcotics Anonymous: 276-5483
- Poison Control: 528-6048
- Rape Crisis: 528-2161
- The Family Link/Runaway Shelter: 725-6911
- Shelby County Office on Aging: 525-CARE
- Suicide and Crisis Intervention: 274-7477
- Wife Abuse Crisis Center: 458-1611
Failure to Report - Policy:

Failure to report is failing to notify the School of intent to be absent or tardy. You must contact the Program Director on the day of tardy or absence. If she is not available, a message should be left with the Administrative Assistant. The notification must be made by a phone call, by 8:30 a.m. FOR EACH DAY OF TARDY OR ABSENCE. A phone message left with anyone else is NOT acceptable. The school needs to know of a student’s intention to be tardy or absent. Failure to report is a serious offense and will result in progressive corrective action. One failure to report in any one school year will result in the student being placed on a 1-day suspension. Second offense will result in a 3-day suspension. Three failures to report in any one school year will result in termination from the educational program. The faculty reserves the right to verify the illness of a student. The student may be required to provide documentation in the form of a physician’s statement if requested. Any time logged as suspension will be made up on the beginning days of the students’ next scheduled annual vacation.

Funeral Leave - Policy:

In the event of a death in the student’s immediate family (defined as: spouse, significant other, child, parent, grandparent, parent-in-law, sibling, sibling-in-law, grandparent, or grandparent-in-law), the student is provided a three [3] day funeral leave.

The student will be required to make up all didactic and clinical practicum work missed.

Grade Appeal - Policy:

Any student, after conference with the individual instructor, may present in writing to the Program Director an appeal from a course grade. No appeal may be made after the last day of classes of the next succeeding regular term/semester. The appeals board will decide the question of grade appeal within two weeks of the date on the written appeal.

The purpose of the appeals board is to be sure that all facts are presented so that the Board can determine whether an unfair treatment has occurred. Depending upon the reason for the appeal, questions typically asked during the appeal are:

- Was there a rule?
- Was the rule known to the student?
- Was corrective action consistent w/policy regarding progressive corrective action?
- Has the rule been consistently enforced?

The process will be informal and the student and School Representative will have ample time to present information to the Board. This is not a legal proceeding. The standard that must be met in determining whether corrective action taken was appropriate and is one of fairness to the student is this circumstance.
A Chairman, without a vote, will moderate the appeal. Each official board member will have one vote by secret ballot and the Board decision is final. If the Board believes the action-giving rise to the appeal was in error, the Board has the authority to recommend overturning or modifying the Program Director's decision.

Any appeal should be a last resort. The student should use all available resources to resolve the question before it comes to an appeal.

**Grade Requirements - Policy:**

Students must maintain a minimum grade point average of 75 in each didactic class. Failure to maintain an average of 75 will result in termination from the program. Scale utilized:

- 95-100 = A
- 85-94 = B
- 75-84 = C
- 74 and Below = Failure

Clinical Practicum Rotations are graded using scale above. Minimum passing score on a CP rotation is 85. Failure to achieve a passing score may require a student to repeat the rotation. Failure of any two Clinical rotations will result in termination from the program.

**Graduation Requirements - Policy:**

Before a student enrolled in the Methodist University Hospital School of Nuclear Medicine Technology can formally graduate, receive the certificate of completion, and sit for the national Registry and/or Certification exams, all the following requirements and/or obligations:

1. Successfully meet all academic requirements of the NMT program as established by the grading policy and academic standards.
2. Successfully meet all clinical practicum requirements of the NMTS program as established by the grading and academic standards.
3. Proven clinical competency as required to sit for the national Registry and/or Certification exams.
4. Successfully meet any and all financial obligations accrued/incurred against Methodist Healthcare while in training.
5. Successfully make up any didactic and/or clinical practicum assignments, times, etc. due to any absence period other than vacation and/or scheduled time-off.
**Identification Badges - Policy:**

To diminish the possibility of patients and hospital staff mistaking a student as a registered technologist, the following policies/rules have been established:

1. Students will wear their Hospital ID badge in plain view, on the left front of clothing with name visible.
2. Students will orally state their student status to patients and hospital staff, if in question.
3. The front of ID badge must be visible & the student’s picture, name and position status easily readable.
4. No stickers or other material[s] that will/may obscure the front of the ID are permitted.

**Inclement Weather - Policy**

In the event of inclement weather, all clinical rotations and classes are subject to cancellation. The program director will notify you by phone whether school will be open or closed. You will be notified by 6:30 a.m. on the day of questionable weather conditions.

**Library Resources - Policy:**

Nuclear Medicine Technology students have full and free access to the following libraries:

1. Methodist University Hospital School of Radiologic Science and Imaging – Basement Crews Wing
2. Methodist University Hospital School of Nuclear Medicine Technology - SON 308/309
3. Methodist University Hospital’s Graduate Medical Education and Nursing Library – Wilson Hall

**Students must follow ‘checkout procedures’ as defined by individual libraries.**

Students are DIRECTLY responsible for returning and/or placing any and all lost, misplaced, damaged, etc. books, journals, CDs, etc. to specific libraries.

**Lunch Period - Policy:**

Each student will be given a minimum of 30 minutes for the lunch period. The school will designate lunch schedules for the students. Although occasional variations in lunch scheduling are permitted if requested by clinical leads, students should take their lunch at the time assigned by school officials.

**Non-Discrimination - Policy:**

Methodist University Hospital School of Nuclear Medicine Technology does not discriminate on the basis of age, gender, race, color, on, creed, or disability that does not interfere with the performance of the duties and responsibilities of a Nuclear Medicine Technologist.
**Pregnancy Policy**

A student has the option to inform program officials of her pregnancy. If the student chooses to voluntarily disclose this information, it must be done in writing. At that point, the student will be a Declared Pregnant Student. Without this document and information, a student cannot be considered pregnant.

If a student wishes to voluntarily declare their pregnancy it must be done in writing and submitted to the Program Director. If the student is pregnant, the following guidelines will apply:

1. The student must submit a statement from a physician attesting pregnancy and expected due date. The student will then decide to take an immediate leave of absence OR continue through the planned clinical rotations.

2. If the student takes an immediate leave of absence and was making satisfactory progress, she may be reinstated at a later date, depending on hours missed (see attendance policy). In the case of spousal pregnancy leave, the pregnancy policy stated applies. It shall be understood that upon her return, all clinical competencies and rotations missed shall be completed prior to graduation from the program. No certificate will be issued until all requirements have met.

3. If the student elects to continue in the program, they must:
   - Counsel with the Program Director and the Radiation Safety Officer of Methodist LeBonheur Healthcare regarding the:
     - nature of potential radiation injury associated with in-utero exposure
     - regulatory limits established by the NCRP and the Tennessee Department of Public Health, and
     - required preventative measures to be taken throughout gestation period.
   - Consult with the Program Director and Radiation Safety Officer to sign a waiver of release declaring that Methodist LeBonheur Healthcare is not liable for radiation exposure since the student elects to remain in the Educational Program.

4. The school will provide a fetal radiation monitor.

The occupational exposure to the fetus will be limited to 500 millirem in nine (9) months. This is achievable following safe radiation practices. No exceptions to the school graduation requirements will be made for pregnancy, and all clinical rotations must be completed before graduation.
**Professional Conduct - Policy:**

In accordance with the policies and procedures governing Methodist Healthcare Associates and Students, NMT students are expected to exhibit professional conduct at all times when engaged in didactic/clinical activities occurring on or related to the campus of Methodist Healthcare Memphis, regardless of physical location.

In addition, all students are expected to conduct themselves in accordance with the “Code of Ethics” developed by the American Society of Radiologic Technologists and The Society of Nuclear Medicine.

Unprofessional behavior toward fellow students, patients, staff, or visitors of any Methodist Healthcare facility will NOT be tolerated and can result in immediate dismissal from the NMT program.

**Professional Organizations:**

In order to promote interest in the various concerns, issues and advancing technology in the Nuclear Medicine profession today, participation in local, state and regional professional organizations is strongly encouraged.

**Radiation Exposure Monitoring - Policy:**

During the first week of the program and PRIOR to arrival to the School, each student will be furnished a body and ring film badge for the purpose of monitoring accumulated radiation dosage. The student's name, social security number, birth date, and starting date will be furnished to the hospital radiation safety officer. New film badges will be issued to each student every month, and the previous month's film badges must be turned in.

Any person receiving an excessive reading on a film badge will receive a notice and report from the Radiological Physicist/Radiation Safety Officer.

The body film badge must be worn facing away from the body with nothing obstructing the front of the badge. The ring film badge is to be worn on the student's dominant hand with the detector palm-up. These badges should be protected from heat and wetness, and must be handled carefully.

The RSO maintains the monthly printout of accumulated dosage. Additionally, a copy of this report will be posted in the dosimetry notebook in the Nuclear Medicine classroom.

Each student is required to review the monthly dosimetry report with the Program Director and/or RSO. In addition, the student is to initial his/her individual reading on the report *each month*. A copy of the monthly dosimetry report will be maintained in the Dosimetry Report notebook located in the Wilson Hall classroom.
\textbf{\textit{Reporting Accidents - Policy:}}

All accidents that occur during school hours resulting in patient, hospital personnel or personal injury, and/or damage to equipment MUST be reported IMMEDIATELY to the Clinical Instructor, designated NMT, Instructor, and/or Program Director.

Students are required to follow the proper procedure for documenting accidents as outlined in the Methodist Healthcare Manuals.

\textbf{\textit{Reporting Illness - Policy:}}

Each student is required to notify the Program Director when an illness is experienced and there is intent to be absent from school.

Reporting conditions:

1. The student must contact the Program Director @ 516-85 0AM on the day of absence.
   
   A. In the event the Program Director is unavailable, the student is to leave a message and a number where they can be reached - \textbf{and in addition:}
   
   B. Contact the Administrative Assistant – 516-8099.

2. If absence period exceeds two days, the student must present a physician’s excuse form in order to return to school.

3. If the illness is of a communicable nature or will affect other students, patients, or staff, the student will not be allowed to return to school during the illness period. The student must present a physician’s excuse form before he/she is allowed to return to school.

4. In the event of prolonged illness or injury where the number of allowable sick days and time off hours are exceeded, the student has two options:
   
   A. Continue in the program and, upon return, make up all missed didactic and clinical work missed; or
   
   B. Withdraw from the program and reapply for admission at a later date, in accordance with routine admissions policies.

\textbf{\textit{Required Health Insurance - Policy:}}

\textbullet{} All students are required to maintain health insurance, \textbf{complete with acute care coverage}, during the entire program.

\textbullet{} Proof of insurance will be required PRIOR to final acceptance.
**Resignations - Policy:** [Withdraw from the program]

“Notice of Resignation” must be submitted in writing to either the Program Director or Medical Director.

Information to be included is:
- reason for resignation
- effective date of resignation

Resignation may be withdrawn any time PRIOR to the effective date given.

In the event a student resigns in accordance with proper procedure, he/she may apply for readmission in accordance with routine admissions policies.

**Student Awards:**

All students successfully completing the Program take part in a formal graduation ceremony.

At the time of graduation, Student Awards that may be presented include:

- **R. Michael Fleming, MD Award** - presented for Academic Excellence
- **Halford Award** - presented for Clinical Excellence
- **Service Recognition Award**

**Student Employment - Policy:**

It is not the intention of the MH-SNMT to dictate whether or not students may be employed outside of school hours.

However, students should be mindful of the commitment the NMT program demands and should plan any outside activities in accordance with required attendance, assignments, clinical rotations, etc.
**Student Health Services - Policy:**

The Methodist University Hospital School of Nuclear Medicine Technology students are provided specific health services through the Methodist Healthcare Associate Health Service. The Associate Health Service initially conducts pre-admission health examinations for the School of Nuclear Medicine Technology.

The Associate Health Service conducts annual routine T for all school students. They also conduct hepatitis screenings and other preventive measures as indicated. Flu vaccination programs and other inoculations are available on an optional basis. The Associate Health Service nurses are available for health counseling or mental and for monitoring blood pressure.

Students who have on-the-job or school related illnesses are seen in the Associate Health Service and the Associate Health Service coordinates treatment and approval to return to school. The Associate Health Service is responsible for approving students to return to school following contagious illnesses and medical reasons of absence.

All above health records on Nuclear Medicine Technology students are maintained in the Associate Health Service. **All students of the Methodist University Hospital School of Nuclear Medicine Technology are allowed the same provisions of health service as any other educational student of the hospital and/or any associate/employee of the system.**

**Injuries or illnesses occurring outside of a school related experience will not be covered by the Associate Health Service.**

**Student Housing - Policy:**

- Students are responsible for all food, lodging, and transportation expenses.
- NMT students are eligible to apply for housing in Wilson Hall building if space is available.
- Contact Barbara Brumley DIRECTLY @ 901-516-8886 for availability information.

**Student Records - Policy:**

A file on each student is only maintained in the Program Director's Office. All records are confidential and are treated as such. Only the Program Director, Medical Director, Clinical Instructor(s), and the student may have access to the student's file without the written permission of the student.

The “Student File” includes the following information:

1. **Admission Folder** - including:
   - Original program application
   - Transcripts - previous education
   - Reference letters
   - Other correspondence prior to or after acceptance into program
2. Clinical Practicum Evaluation forms  
3. Didactic Evaluation forms, Grades  
4. Attendance and punctuality history  
5. Student Counseling Records (if applicable)  
6. Transcript from Methodist University Hospital NMT Program

**Students can view their personal file at any time.**

After graduation, Students must submit a written request to the School’s Program Director to obtain a copy of their NMT program transcript.

**w Student Supervision - Policy:**

The purpose of the clinical practicum experience is to integrate the theories and principles of NMT learned in didactic lectures and lab exercises with actual performance of both imaging and non-imaging procedures.

Student technologists will be under the supervision of NMTs, Clinical Instructors, Program Director, RSO, and/or Nuclear Medicine Physicians while in clinical areas. The level of direct supervision will vary in accordance with the student’s clinical and education progress.

Students must satisfy minimum competency requirements before moving to degrees of less-direct supervision.

See Clinical Practicum Education section for more detailed explanation.

**w Tuition Refund Policy - Policy:**

The following percentages apply to refund of paid tuition for students that appropriately withdraw from the School of Nuclear Medicine Technology.

1. **100% refund:** Methodist Healthcare will provide a 100% refund of PAID program tuition if the student withdraws, per procedure, from the program within the first 60 days* of the program.

2. The student is responsible for full school tuition if withdrawal occurs after day 61 of training.

* ‘60 days’ above are calculated using the official program ‘start’ date and ‘withdrawal’ date for the applicable class.

**w Vacation - Policy:**

In accordance with radiological health policies, student will be granted a minimum of 10 (ten) days’ vacation per calendar year.

All vacation days will be assigned by the NM Program Director.
<table>
<thead>
<tr>
<th>OFFENSES</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Offense</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Offense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absence from clinical assignment without authorization.</td>
<td>3 Day Suspension</td>
<td>Discharge</td>
</tr>
<tr>
<td>Consumption or possession of intoxicants on hospital property.</td>
<td>Discharge</td>
<td></td>
</tr>
<tr>
<td>Reporting for school while under the influence of an intoxicant.</td>
<td>Discharge</td>
<td></td>
</tr>
<tr>
<td>Arrest and charge of felony or other serious crime.</td>
<td>Suspension until settled</td>
<td></td>
</tr>
<tr>
<td>Conviction of a felony or other serious crime.</td>
<td>Discharge</td>
<td></td>
</tr>
<tr>
<td>Unauthorized possession of hospital property.</td>
<td>Discharge</td>
<td></td>
</tr>
<tr>
<td>Threatening or fighting with an employee, associate, patient, visitor,</td>
<td>Discharge</td>
<td></td>
</tr>
<tr>
<td>or another student.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willful destruction of hospital property.</td>
<td>Discharge</td>
<td></td>
</tr>
<tr>
<td>Gross negligence</td>
<td>Discharge</td>
<td></td>
</tr>
<tr>
<td>Unauthorized release of confidential information</td>
<td>Discharge</td>
<td></td>
</tr>
<tr>
<td>Unauthorized absence from the Nuclear Medicine Departments after</td>
<td>3 Day suspension</td>
<td>Discharge</td>
</tr>
<tr>
<td>reporting in (See Absence/Tardy Policy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loud or disruptive behavior</td>
<td>Counseling Notice</td>
<td>Written Warning</td>
</tr>
<tr>
<td>Smoking in unauthorized areas</td>
<td>Counseling Notice</td>
<td>Written Warning</td>
</tr>
<tr>
<td>Failure to adhere to uniform</td>
<td>Written Warning</td>
<td>One day suspension</td>
</tr>
</tbody>
</table>
## Holiday/ Vacation Schedule

### 2010-2011 - Scheduled Time OFF

<table>
<thead>
<tr>
<th>Holiday</th>
<th>Status</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memorial Day</td>
<td>Off</td>
<td>• 5/31/2010</td>
</tr>
<tr>
<td>Independence Day</td>
<td>Off</td>
<td>ß 7/5/2010</td>
</tr>
<tr>
<td>Labor Day</td>
<td>Off</td>
<td>ß 9/6/2010</td>
</tr>
<tr>
<td>Holiday</td>
<td>Off</td>
<td>ß 12/4/2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ß 12/27/2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ß 12/28/2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ß 12/29/2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ß 12/30/2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ß 12/31/2010</td>
</tr>
<tr>
<td>MLK Day</td>
<td>Off</td>
<td>ß 1/17/2011</td>
</tr>
<tr>
<td>Spring Break</td>
<td>Off</td>
<td>ß 3/24/2011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ß 3/25/2011</td>
</tr>
<tr>
<td>Good Friday</td>
<td>Off</td>
<td>• 4/22/11</td>
</tr>
</tbody>
</table>

**Total = 15 days**
Overview of Clinical Education

The clinical practicum education coursework helps to integrate the cognitive ("classroom") aspect with the psychomotor and affective skills required of a student nuclear medicine technologist in the Nuclear Medicine Technology Program. Clinical education involves three phases or levels of participation: **observation, assistance, and performance**.

The student begins clinical participation by first **observing** an NMT in the execution of duties. This participation moves from a passive mode of observation to a more active mode of **assisting** the NMT in NM procedures. The rate at which the student progresses is dependent upon the ability of the student to comprehend and perform the various assigned tasks.

As the student gains experience in the various procedures, he/she gradually moves to an independent clinical performance stage. At this point, the student is actually **performing** the procedure under the direct supervision of an NMT. "Direct Supervision" means that the qualified NMT:

1. Reviews the request for the examination in relation to the student's achievement;
2. Evaluates the condition of the patient in relation to the student's achievement;
3. Is present during the performance of procedures; and
4. Reviews and approves imaging results, data manipulation, etc.

After demonstrating competence in performing a specific radiographic procedure, the student may be permitted to perform procedures under indirect supervision. "Indirect Supervision" means that the qualified NMT reviews, evaluates and approves the procedure as indicated above and is immediately available to assist the student regardless of the level of student achievement. "Immediately available" is interpreted as the presence of a qualified NMT adjacent to the room or location where a NM procedure is being performed. This availability applies to all areas where radionuclides and/or radiopharmaceuticals are employed.

During the Student's clinical practicum education, his/her performance is evaluated, on an on-going basis, by site's Clinical Instructor and/or the supervising NMTs.

The student is evaluated on the specific NMT procedures as outlined in this Handbook, general competence in performing previously mastered procedures, and the development of their professional skills.

* For more detailed explanation - see 'Student Supervision' under the Clinical Practicum Education section.
Clinical Practicum Education

Clinical practicum education takes place in multiple facilities

Methodist University Hospital is a 669-bed facility, located at 1265 Union Avenue, Memphis, TN, 38104. 12-14 registered and/or certified Nuclear Medicine Technologists staff the three imaging areas.

Nuclear Medicine services for this facility are provided as follows:
- Nuclear Medicine Department - Performs a wide variety of imaging and non-imaging Nuclear Medicine Procedures
- The PET Center - exclusively performs PET/CT procedures
- OP Center - performs all Nuclear Medicine procedures except cardiac

<table>
<thead>
<tr>
<th>Site</th>
<th>Clinical Instructor</th>
<th>Address</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>University NM</td>
<td>Robert Owens</td>
<td>3rd Floor Tower</td>
<td>901.516.7363</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1265 Union - 38104</td>
<td></td>
</tr>
<tr>
<td>University PET/CT</td>
<td>Ken Thronberry</td>
<td>Ground Floor</td>
<td>901.276.6413</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1388 Madison - 38104</td>
<td></td>
</tr>
<tr>
<td>University Outpatient Ctr</td>
<td>Rachel Ross</td>
<td>Ground Floor</td>
<td>901.722.3131</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1801 Union Avenue - 38104</td>
<td></td>
</tr>
</tbody>
</table>

Methodist North Hospital is a 200-bed facility, located at 3960 New Covington Pike, Memphis, TN, 38128. 12-14 registered and/or certified Nuclear Medicine Technologists staff the three imaging areas.

The majority of nuclear cardiology procedures are preformed in the imaging area on the 2nd floor of the hospital. The outpatient center is located in a free-standing building behind the Hospital.

Nuclear Medicine services for this facility are provided as follows:
- Nuclear Medicine - Main Department - Performs all Nuclear Medicine Procedures except cardiac
- Nuclear Cardiology - Second Floor
- Outpatient Center - performs all Nuclear Medicine procedures except cardiac

<table>
<thead>
<tr>
<th>Site</th>
<th>Clinical Instructor</th>
<th>Address</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>North NM: Main Department</td>
<td>Linda Nicoll</td>
<td>Ground Floor 3960 New Covington Pike 38128</td>
<td>Main - 901.516.5265</td>
</tr>
<tr>
<td>North NM: Nuclear Cardiology</td>
<td>Linda Nicoll</td>
<td>2nd Floor 3960 New Covington Pike 38128</td>
<td>Nuclear Cardiology 901.516.5170</td>
</tr>
<tr>
<td>North Outpatient Center</td>
<td>Linda Nicoll</td>
<td>Ground Floor 3960 New Covington Pike 38128</td>
<td>Outpatient Center 901.516.5217</td>
</tr>
</tbody>
</table>
Methodist South Hospital is a 200-bed facility, located at 1300 Wesley Drive, Memphis, TN, 38116. The department is currently staffed with 5-6 registered and/or certified Nuclear Medicine Technologists.

At this facility all Nuclear Medicine procedures are performed in one main department located adjacent to the Radiology Department.

<table>
<thead>
<tr>
<th>Site</th>
<th>Clinical Instructor</th>
<th>Address</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>Jim Franks</td>
<td>Ground Floor</td>
<td>Radiology - 901.516.3809</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1300 Wesley Drive</td>
<td>NM - 901.516.3022</td>
</tr>
</tbody>
</table>

Methodist Germantown Hospital is a 209-bed facility, located at 7691 Poplar Avenue, Germantown, TN, 38138. Methodist Germantown is currently staffed with 9-11 registered and/or certified Nuclear Medicine Technologists. The Outpatient center is located at 1377 Germantown Rd. South. Two NMTs staff the facility.

Nuclear Medicine services for this facility are provided as follows:
- Nuclear Medicine Department - performs all Nuclear Medicine Procedures except cardiac
- Nuclear Cardiology - First Floor
- Outpatient Center - performs basic Nuclear Medicine Procedures [NO cardiology]

<table>
<thead>
<tr>
<th>Site</th>
<th>Clinical Instructor</th>
<th>Address</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germantown - NM</td>
<td>Linda Kroencke</td>
<td>Ground Floor</td>
<td>Radiology - 901.516-6999</td>
</tr>
<tr>
<td>Germantown - Outpatient Center</td>
<td>Linda Kroencke</td>
<td>Ground Floor</td>
<td>901.516-6995</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1377 Germantown Rd. South</td>
<td></td>
</tr>
</tbody>
</table>

LeBonheur Children's Medical Center: is the Mid-South's premier pediatric hospital and operates the region's only pediatric emergency department and pediatric intensive care unit. A licensed, fully accredited 225-bed center, it is recognized as the region's pediatric specialty referral center. **In 2008, LeBonheur's NM department was awarded accreditation by the ACR.**

Nuclear Medicine services for this facility are provided as follows:

- Nuclear Medicine Department - Performs a wide variety of pediatric Nuclear Medicine imaging procedures.

<table>
<thead>
<tr>
<th>Site</th>
<th>Clinical Instructor</th>
<th>Address</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>LeBonheur Children's Medical Center</td>
<td>Ashley Serio</td>
<td>1st Floor</td>
<td>Radiology - 901-287-6041</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Department of Radiology</td>
<td>Nuclear Medicine -901-287-5167</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 North Dunlap</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Memphis, TN 38103</td>
<td></td>
</tr>
</tbody>
</table>

GE Healthcare Nuclear Pharmacy is one of the largest and most modern Nuclear Pharmacy in the Memphis and Mid-South areas.

Services provided at this facility include:
- Production, Preparation, Compounding, & Distribution of radionuclides/radiopharmaceuticals
- Clinical and didactic radiopharmacy training for Student Nuclear Medicine Technologists

<table>
<thead>
<tr>
<th>Site</th>
<th>Clinical Instructor</th>
<th>Address</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Electric Healthcare</td>
<td>Bob Irwin</td>
<td>7760 Trinity Rd</td>
<td>901.396.4090</td>
</tr>
<tr>
<td>[Formerly - Amersham Health]</td>
<td></td>
<td>Suite 102</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cordova, TN 38018</td>
<td></td>
</tr>
</tbody>
</table>
### SAMPLE - Clinical Practicum Rotation Schedule

#### SAMPLE - Clinical Assignments

2/25/08 - 5/16/08

Clinical Hours: 8:00 AM - 3:30 PM

[2:30 on Fridays]

<table>
<thead>
<tr>
<th>Clinical assignment</th>
<th>Dates</th>
<th>Student[s]</th>
<th>Approx. # of clinical hours of experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>2/25/08 - 4/10/08</td>
<td>Student A</td>
<td>145 hours</td>
</tr>
<tr>
<td>South</td>
<td>2/25/08 - 4/10/08</td>
<td>Student C</td>
<td>145 hours</td>
</tr>
<tr>
<td>Germantown</td>
<td>2/25/08 - 4/10/08</td>
<td>Student B</td>
<td>145 hours</td>
</tr>
<tr>
<td>North</td>
<td>2/25/08 - 4/10/08</td>
<td>Student D</td>
<td>145 hours</td>
</tr>
<tr>
<td>PET</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clinical assignment</th>
<th>Dates</th>
<th>Student[s]</th>
<th>Approx. # of clinical hours of experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>4/14/08 - 5/16/08</td>
<td>Student C</td>
<td>100 hours</td>
</tr>
<tr>
<td>South</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germantown</td>
<td>4/14/08 - 5/16/08</td>
<td>Student D</td>
<td>100 hours</td>
</tr>
<tr>
<td>North</td>
<td>4/14/08 - 5/16/08</td>
<td>Student A</td>
<td>100 hours</td>
</tr>
<tr>
<td>PET</td>
<td>4/14/08 - 5/16/08</td>
<td>Student B</td>
<td>100 hours</td>
</tr>
</tbody>
</table>
Clinical and Imaging Competencies

In order to meet the program's Graduation Requirements and sit for national board exams in NMT, Methodist Student NMTs must demonstrate competency in all of the mandatory Imaging and Nonimaging Procedures as identified by the ARRT Content Specifications for Examinations in Nuclear Medicine Technology (2000). See ARRT section of this handbook for more details and a listing of ARRT Content Categories and SNM Curriculum Units.

In addition, the Methodist Program requires the student to demonstrate competency in four (4) elective imaging procedures, as well as additional NMT activities as listed on the Practical Competency list included in this section.

Practical Competencies

When the student has performed a specific procedure enough that they feel they have mastered the performance of the procedure, the student is ready to challenge for a Pre-Comp check-off in said procedure. When Pre-comp has been achieved, the student can then challenge for a Final Competency check-off.

Pre-Comp:

- The purpose of the 'pre-comp' is to give the student technologist a means for assessing their performance and providing them with feedback regarding areas where they need improvement, PRIOR to challenging for a Final Competency.

- The student technologist must achieve a ‘satisfactory’ on all Essential Components of Competency to pass the Pre-Comp and move to challenging a Final Competency.

Final-Competency:

- The student technologist must achieve a ‘satisfactory’ on all Essential Components of Competency to pass a Final Competency.

- The student technologist will be eligible to challenge the Final Competency total of three (3) times. If the SNMT is not successful after the third attempt, termination from the program will follow.
ARRT - NUCLEAR MEDICINE TECHNOLOGY

Didactic and Clinical Competency Requirements
Eligibility Requirements Effective January 2008

Candidates for certification are required to meet the Professional Requirements specified in Section 2.02 of the ARRT Rules and Regulations. This document identifies the minimum didactic and clinical competency requirements for certification referenced in the Rules and Regulations.

Candidates who complete a formal educational program accredited by a mechanism acceptable to the ARRT will have obtained education and experience beyond the requirements specified here.

ii Didactic Requirements

Candidates must successfully complete coursework addressing the topics listed in the ARRT Content Specifications for the Examination in Nuclear Medicine Technology. These topics are presented in a format suitable for instructional planning in the SNM Curriculum Guide for Educational Programs in Nuclear Medicine Technology (2002).

ii Clinical Requirements

As part of their educational program, candidates must demonstrate competence in the clinical activities identified in this document. Demonstration of clinical competence means that the program director or designee has observed the candidate performing the procedure, and that the candidate performed the procedure independently, consistently, and effectively. Candidates must demonstrate competence in:

• Four patient care activities.
• Four quality control procedures.
• Twenty-five diagnostic and therapeutic procedures.

ii Documentation

The following pages identify specific clinical competencies and requirements. Candidates may wish to use these pages, or their equivalent, to record completion to be sent to the ARRT.

To document that the didactic and clinical requirements have been satisfied, candidates must have the program director (and authorized faculty member if required) sign the ENDORSEMENT SECTION of the Application for Certification included in the Certification Handbook.

Note: Candidates who complete their educational program during 2005 or 2006 may use either the previous requirements (effective 2001) or the current requirements (effective 2005). Candidates who graduate after December 2006 may no longer use the previous competency requirements.
Nuclear Medicine Technology
Clinical Competency Requirements

The clinical competency requirements include the patient care activities, quality control procedures, and diagnostic and therapeutic procedures identified below. Demonstration of competence should include variations in patient characteristics (e.g., age, gender, medical condition).

1. General Patient Care

Requirement: Candidates must demonstrate competence in all four patient care activities listed below. The activities should be performed on patients; however, simulation is acceptable (see endnote) if state or institutional regulations prohibit candidates from performing the procedures on patients.

<table>
<thead>
<tr>
<th>Patient Care Activity</th>
<th>Date Completed</th>
<th>Competence Verified By</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vital Signs (BP, pulse, respiration, temperature)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venipuncture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECG (lead placement; recognition of common dysrhythmias)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Quality Control Procedures

Requirement: Candidates must demonstrate competence in all five quality control activities listed below.

<table>
<thead>
<tr>
<th>Quality Control Procedure</th>
<th>Date Completed</th>
<th>Competence Verified By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamma Camera or SPECT (uniformity, resolution, center of rotation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dose Calibrator (constancy, linearity)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well Counter/ Uptake Probe (energy calibration)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey Meter (daily check)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PET blank scan</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Nuclear Medicine Technology
Clinical Competency Requirements (cont.)

3. Diagnostic and Therapeutic Procedures

Requirement: Candidates must demonstrate competence in 25 different nuclear medicine procedures. Candidates should demonstrate the following skills when performing the procedures: evaluation of requisition; patient instructions, preparation, and care; selection, handling, and administration of radiopharmaceutical; equipment configuration and patient positioning; radiation safety; and image processing and evaluation. All procedures must be performed on patients, with the exception of thyroid therapy which may be simulated (see endnote).

The 25 procedures to be performed are selected from the categories (cardiovascular, endocrine, etc.) listed in the table below. Candidates must select 19 of the 25 procedures from the categories as specified in the table. The remaining 6 procedures may be chosen from any category. The table indicates the procedures in each category, and specifies the minimum number of procedures that must be performed in each category.

<table>
<thead>
<tr>
<th>Category*</th>
<th># Procedures in Category</th>
<th># That Must Be Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abscess and Infection</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Skeletal</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Endocrine/Exocrine</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Genitourinary</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Respiratory</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Tumor/Antibody</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>SPECT</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Therapeutic Procedures</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Central Nervous System (elective)</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>19</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>43</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>+7 electives from any category</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>26</strong></td>
</tr>
</tbody>
</table>

Example: Assume a candidate demonstrates competence in 3 cardiovascular procedures (cardiac first pass, gated blood pool, and PET). This means that the candidate has fulfilled the cardiovascular requirement of 2 procedures, and has also completed 1 elective.

- Note: The specific nuclear medicine procedures within the following two pages.
### Nuclear Medicine Technology
#### Clinical Competency Requirements (cont.)

<table>
<thead>
<tr>
<th><strong>Nuclear Medicine Procedure</strong></th>
<th><strong>Date Completed</strong></th>
<th><strong>Competence Verified By</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Abscess and Infection (1)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gallium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WBC Imaging</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Skeletal (2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three-Phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole Body</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cardiovascular (2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gated Blood Pool Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myocardial Perfusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PET or PET/CT</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Endocrine/ Exocrine (2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thyroid Uptake &amp; Scan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thyroid Metastatic Survey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parathyroid</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gastrointestinal (3)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatobiliary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gastroesophageal Reflux</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gastric Emptying</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GI Bleeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meckel’s Diverticulum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liver</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Genitourinary (1)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renal: Dynamic Perfusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renal: Cortical Imaging</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Respiratory (2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perfusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventilation (gas or aerosol)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantitative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Nuclear Medicine Technology  
Clinical Competency Requirements (cont.)

<table>
<thead>
<tr>
<th>Nuclear Medicine Procedure</th>
<th>Date Completed</th>
<th>Competence Verified By</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tumor/ Antibody (2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gallium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monoclonal Antibodies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lymphoscintigraphy (breast, melanoma, or sentinel node)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PET or PET/CT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Octreoscan</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SPECT (3)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tumor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiac</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renal</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Therapeutic Procedures (1)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thyroid: Ablation (may be simulated)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thyroid: Hyperthyroidism (may be simulated)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palliative Bone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hodgkin’s Lymphoma</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Central Nervous System (0 / elective)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brain: Planar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brain: Dynamic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brain: PET or PET/CT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cisternography: Routine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cisternography: CSF leak</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The ARRT requirements specify that certain clinical procedures may be simulated. Simulations must meet the following criteria: (a) the student is required to competently demonstrate skills as similar as circumstances permit to the cognitive, psychomotor, and affective skills required in the clinical setting; (b) the program director is confident that the skills required to competently perform the simulated task will generalize or transfer to the clinical setting. Examples of acceptable simulation include: demonstrating CPR on a mannequin; performing venipuncture by demonstrating aseptic technique on another person, but then insertig the needle into an artificial forearm or grapefruit.
SNMTS Code of Ethics

Code of Ethics: For the Nuclear Medicine Technologist

Nuclear Medicine Technologists, as members of the health care profession, must strive as individuals and as a group to maintain the highest of ethical standards.

The Principles (SNMTS Code of Ethics) listed below are not laws, but standards of conduct to be used as ethical guidelines by nuclear medical technologists. These Principles were adopted by the Technologist Section and the Society of Nuclear Medicine at the 2004 Annual Meeting. They are standards of conduct to be used as a quick guide by nuclear medicine technologists.

- **Principle 1**: The Nuclear Medicine Technologist will provide service with compassion and respect for the dignity of the individual and with the intent to provide the highest quality of patient care.

- **Principle 2**: The Nuclear Medicine Technologist will provide care without discrimination regarding the nature of the illness or disease, gender, race, religion, sexual preference or socioeconomic status of the patient.

- **Principle 3**: The Nuclear Medicine Technologist will maintain strict patient confidentiality in accordance with state and federal regulations.

- **Principle 4**: The Nuclear Medicine Technologist will comply with the laws, regulations, and policies governing the practice of nuclear medicine.

- **Principle 5**: The Nuclear Medicine Technologist will continually strive to improve their knowledge and technical skills.

- **Principle 6**: The Nuclear Medicine Technologist will not engage in fraud, deception, or criminal activities.

- **Principle 7**: The Nuclear Medicine Technologist will be an advocate for their profession.
Scope of Practice for the Nuclear Medicine Technologist 2007
(Revised September 2008)

The scope of practice in nuclear medicine technology includes, but is not limited to, the following areas and responsibilities:

- **Patient Care:** Requires the exercise of judgment to assess and respond to the patient’s needs prior to, during, and after procedures in the nuclear medicine department, and in patient medication reconciliation.
- **Quality Control:** Requires the evaluation and maintenance of a quality control program for all instrumentation to ensure its proper performance and stability.
- **Diagnostic Procedures:** Requires the utilization of appropriate techniques, administration of non-radiopharmaceutical agents when part of standard procedures, to ensure quality diagnostic images and/or laboratory results.
- **Radiopharmaceuticals:** Involves the procurement, preparation, quality control, dispensing, dose calculation, identification, documentation, administration, disposal, storage, and safe handling of radioactive materials used by the nuclear medicine technologist.
- **In Vivo Diagnostic Testing:** Involves the procurement, preparation, quality control, dispensing, dose calibration of radiopharmaceuticals and oral, inhalation, or intravenous administration. In some cases radiopharmaceuticals may be administered by other routes under the direct supervision of a physician.
- **In Vitro Diagnostic Testing:** Involves the procurement, preparation, quality control, dispensing, dose calibration of radiopharmaceuticals and oral, inhalation, or intravenous administration.
- **Transmission Imaging:** Involves, but is not limited to, the operation of gamma cameras with sealed sources of radioactive material for transmission imaging with single photon emission computed tomography (SPECT) or positron emission tomography (PET) and operation of cameras with x-ray tubes for transmission imaging when performed as part of SPECT/CT or PET/CT. Additionally includes diagnostic CT when performed on SPECT/CT or PET/CT cameras, including the administration of oral and intravenous contrast (requires education in CT) and the operation of scanners with x-ray tubes for the measurement of bone density.
- **Radionuclide Therapy:** Involves, but is not limited to, assisting an authorized user in the application, management, preparation, and administration of radiotherapeutic procedures and administration of non-radiopharmaceutical agents by oral and intravenous routes when part of standard procedures required for treatment.
- **Radiation Safety:** Involves, but is not limited to, educating the public while practicing techniques that will minimize radiation exposure to the patient, general public and health care personnel, through consistent use of protective devices, shields, monitors, and other devices consistent with ALARA (as low as reasonably achievable), as well as decontaminating spills and other inappropriate releases of radiation.

I. **Patient Care**

   A. A nuclear medicine technologist provides patient care, including but not limited to:

      1. Providing for proper comfort and care of the patient prior to, during and after a procedure, including but not limited to monitoring of intravenous lines (i.e., central lines, Peripherally Inserted Central Catheters [PICC]), oxygen supplies, drains, and patients who are under sedation; and operation of blood pressure cuffs, electrocardiogram (ECG) machines, pulse oximeters, intravenous pumps, and oxygen delivery regulators.
      2. Insertion of peripheral intravenous catheters required for performance of a nuclear medicine procedure.
      3. Establishing and maintaining proper communication with patients (e.g., proper introduction, appropriate explanation of the procedure, etc.).
      4. Behaving in a professional manner in consideration of patients’ rights, and resulting in the provision of the highest quality patient care possible.
      5. Providing a safe and sanitary working environment for patients and the general public, using proper infection control practices in compliance with expected precaution policies.
      6. Recognizing and responding to an emergency situation at a level commensurate with one’s training and competency including cardiopulmonary resuscitation (CPR) and the use of automatic external defibrillators (AED).

   B. The tasks a nuclear medicine technologist must perform when preparing the patient for an examination include, but are not limited to:

      1. Verifying patient identification, pregnancy status, breast-feeding status, and written orders for the procedure.
      2. Ensuring that informed consent has been obtained, as prescribed by the institution, whenever necessary.
3. Confirming that the indication for the procedure is appropriate, and consulting with the authorized user
   and/or referring physician whenever necessary to ensure that the proper procedure is performed.
4. Obtaining a pertinent patient history.
5. Ensuring that any preprocedural preparation has been completed, including but not limited to fasting,
   hydration, thyroid blocking, voiding, bowel cleansing, and suspension of interfering medications.
6. Explaining the procedure to the patient and/or family and, where appropriate, to the parents and/or
   legal guardian, including but not limited to patient involvement, length of study, and radiation safety
   issues.
7. Collecting samples for laboratory procedures and forming pertinent waived in vitro diagnostic testing
   laboratory analyses, including urine pregnancy testing and fasting blood sugar. Additionally, in vitro
   diagnostic testing laboratory procedures include but are not limited to, secretions, saliva, breath,
   blood, and stool, to measure biodistribution of radiopharmaceuticals.

C. A nuclear medicine technologist performs administrative procedures, including but not limited to:
1. Maintaining an appropriate inventory of medical/surgical supplies, radiopharmaceuticals, storage media,
   and other items required to perform procedures in a timely manner.
2. Scheduling patient procedures appropriate to the indication and in the proper sequence.
3. Maintaining appropriate records of administered radioactivity, quality control procedures, patient
   reports, and other required records.
4. Developing and revising when necessary policies and procedures in accordance with applicable
   regulations.
5. Actively participating in total quality management/continuous quality improvement programs (i.e., age-
   specific competencies, patient education, and patient restraint and immobilization).

II. Quality Control—Nuclear Instrumentation
A nuclear medicine technologist ensures the proper performance of imaging systems, storage media, and
radiation detection and counting devices, including but not limited to scintillation cameras, dose calibrators,
survey instruments, scintillation probes and well counters, and data processing and image production devices.

III. Diagnostic Procedures
A. A nuclear medicine technologist performs imaging procedures, including but not limited to:
1. Preparing, evaluating and properly administering the appropriate radiopharmaceuticals and/or
   pharmaceuticals and contrast (under the direction of an authorized user).
2. Establishing and/or properly maintaining venous access routes of various configurations (in
   accordance with hospital policies and procedures).
3. Selecting the appropriate imaging or data collection parameters.
4. Administering radiopharmaceuticals/pharmaceuticals through various routes, including but not limited
   to oral, intravesical, inhalation, intravenous, intramuscular, subcutaneous, and intradermal (under the
   direction of an authorized user).
5. Positioning the patient for imaging, adapting the protocol to patient limitations, and acquiring
   diagnostic quality images.
6. Positioning and verifying the proper placement of electrocardiographic leads.
7. Reviewing images to ensure that required information has been acquired, processed properly, and is
   of the highest quality.
8. Assisting in cardiac stress testing procedures when performed in conjunction with nuclear medicine
   procedures.
9. Performing data collection, processing, and analysis.
10. Archiving data to and from storage media.
B. A nuclear medicine technologist performs nonimaging in vivo and/or radioassay studies, including but
    not limited to:
1. Operating laboratory equipment including well counters, probes, and other detection devices to
   measure the biodistribution of radiopharmaceuticals.
2. Preparing doses and standards.
3. Collecting the appropriate specimen for procedures using standard precautions.
4. Gathering, validating and documenting data.
5. Managing biohazardous, chemical, and radioactive waste in accordance with applicable regulations
    and specific facility policies.

IV. Radiopharmaceuticals
A. A nuclear medicine technologist procures and maintains radiopharmaceutical products and adjunct
   supplies.
B. A nuclear medicine technologist properly prepares and administers diagnostic radiopharmaceuticals under
   the direction of an authorized user in accordance with all federal, state and institutional guidelines.
V. Radionuclide Therapy
A nuclear medicine technologist properly prepares and administers therapeutic radionuclides, radiopharmaceuticals, and pharmaceutical agents by oral and/or intravenous routes when these agents are part of a standard procedure that is required for treatment under the direction of an authorized user in accordance with federal, state, and institutional regulations.

VI. Radiation Safety
A nuclear medicine technologist performs all procedures utilizing ionizing radiation safely and effectively, applying federal, state, and institutional regulations, including but not limited to:
A. Maintaining compliance with all applicable regulations.
B. Performing appropriate radioactive contamination monitoring and decontamination procedures.
C. Disposing of radioactive waste in accordance with federal, state and institutional regulations.
D. Participating in programs designed to instruct other personnel about radiation hazards and principles of radiation safety.
NMTCB - Components of Preparedness

Components of preparedness statements are published by the NMTCB to assist students, program directors, and item writers. Each task is keyed to the 2003 Task Analysis published by the NMTCB, which is the basis for the NMTCB exam. These tasks apply to the equipment, procedures, and pharmaceuticals that are published with the Task Analysis. Within each task, the Components of Preparedness have four subheadings. The first, Content base, lists the aspects of cognitive knowledge that apply to the task. The other three subheadings provide learning objectives for the task at three different taxonomic levels. The Comprehension level asks for recall of information, such as definitions, regulations, and procedures, without applying them to any specific situation. The Application level asks how a task is performed in a prospective manner, and may include calculations and determination of numeric quantities. The Analysis level takes a particular situation and asks about interpretation, evaluation and correction of results. While there is only one objective listed under each taxonomic level, keep in mind that each task may have several objectives in each level. The listed objectives are given as examples of questions that can be written at each level.

per www.nmcb.org 8/10/09 jml

GROUP I: RADIATION SAFETY (15%)

Task #1: Post appropriate signs in designated areas to comply with NRC regulations
1. NRC regulations
   a. Restricted & unrestricted areas
   b. Effective dose equivalent limits
2. Radiation surveys
   a. Survey meters
   b. Area monitoring
3. Radiation units
4. Inverse square law and shielding equation

Task #2: Prepare and package radioactive materials for transportation
1. Regulatory requirements
   a. NRC
   b. DOT
2. Radiation surveys of packages
   a. Survey meters
   b. Well counters
   c. Surface contamination limits
   d. Shipping labels
3. Packaging types (materials)
   a. Exempt quantities
   b. Non-exempt quantities
4. Record-keeping

Task #3: Use personal radiation monitoring devices
1. NRC regulations
   a. Effective dose equivalent limits
   b. Monitoring requirements
2. Types, characteristics, and proper use of personal monitoring devices
3. Properties of radioactivity
4. Radiation surveys
   a. Area monitoring
   b. Patient monitoring
5. Exposure limits
   a. Hospitalized patients
   b. Hospital personnel
   c. General public
6. Record-keeping

Task #4: Review monthly personnel exposure records
1. NRC regulations
   a. Effective dose equivalent terms and limits
   b. ALARA concepts
2. Properties of radioactivity
3. Absorbed dose units
4. Types, characteristics, and proper use of personnel monitoring devices
5. Record-keeping
Task #5: Take appropriate measures to reduce radiation exposure
1. NRC regulations
   a. Effective dose equivalent limits
   b. ALARA concepts
   c. Shielding requirements
2. Properties of nuclear radiation
3. Radiation units
4. Biological effects of radiation
5. Radiation protection techniques
   a. Time
   b. Distance
   c. Shielding
6. Exposure rate calculations
7. Types and characteristics of personnel monitoring devices
8. Radiation surveys
   a. Area monitoring
   b. Patient monitoring
9. Record-keeping

Task #6: Notify the appropriate authority of excessive radiation exposure
1. NRC regulations
   a. Acceptable ranges for diagnostic and therapeutic procedures
   b. Effective dose equivalent limits (TEDE, etc.)
   c. Reporting procedures
2. Types and characteristics of personnel and patient monitoring devices
3. Radiation surveys
   a. Survey meters
   b. Area monitoring
4. Exposure rate calculations

Task #7: Notify the appropriate authority of misadministration
1. Regulatory requirements
   a. NRC
      i. Recordable events
      ii. Medical events (reportable)
      iii. Reporting procedures
   b. FDA
2. Nuclear medicine diagnostic and therapeutic procedures
   a. Approved radiopharmaceuticals
   b. Routes of administration
   c. Activity ranges
3. Record-keeping

Task #8: Utilize proper methods for the use and storage of radioactive materials
1. Regulatory requirements
   a. NRC
   b. FDA
2. Characteristics of radioactive materials
   a. Physical properties
   b. Radiation emissions
3. Radiation protection techniques
   a. Beta emitters
   b. Gamma emitters
   c. Radioactive gases
4. Storage requirements of radioactive materials
   a. Temperature
   b. Light
   c. Humidity
   d. Ventilation
   e. Shielding
5. Record-keeping
Task #9: Instruct the patient, family and staff in radiation safety precautions after the administration of therapeutic radiopharmaceuticals
1. NRC regulations
2. Biological properties of radiopharmaceuticals
   a. Biodistribution
   b. Excretion
3. Radiation safety practices
   a. Sodium I-131
   b. Pure beta emitters
4. Communications skills
   a. Written
   b. Oral
5. Patient and personnel monitoring
6. Record-keeping

Task #10: Provide instruction on proper radiation emergency procedures
1. NRC regulations
2. Radiation safety procedures
3. Management of radiation emergencies
4. Decontamination procedures
5. Operation of radiation detection devices

Task #11: Perform wipe tests and area radiation surveys
1. NRC regulations
2. Properties of nuclear radiation
3. Radiation units
4. Survey instruments and well-counters
5. Area monitoring
   a. Area surveys
   b. Wipe tests
6. Record-keeping and frequency of required tests.

Task #12: Prepare, survey and clean radiotherapy isolation room
1. NRC regulations
2. Radiation safety procedures
3. Decontamination procedures
4. Area monitoring
   a. Operation of radiation detection devices
   b. Surveys and wipe tests
5. Radioactive waste storage and disposal
6. Record-keeping

Task #13: Survey, inspect and inventory incoming radioactive materials
1. Regulatory requirements
   a. NRC
   b. DOT
2. Package monitoring requirements
   a. Survey instruments
   b. Survey methods
   c. Wipe tests
3. Record-keeping
2009 NMTCB Task List

Group I: Radiation Safety
#1: Post appropriate signs in designated areas to comply with NRC regulations.
#2: Prepare and package radioactive materials for transport.
#3: Use personal radiation monitoring devices.
#4: Review monthly personnel exposure records.
#5: Take appropriate measures to reduce radiation exposure.
#6: Notify the appropriate authority of excessive radiation exposure.
#7: Notify the appropriate authority of misadministration.
#8: Utilize proper methods for the use and storage of radioactive materials.
#9: Instruct pt, family & staff in radiation safety precautions after administration of therapeutic radiopharmaceuticals.
#10: Provide instruction on proper radiation emergency procedures.
#11: Perform wipe tests and area radiation surveys.
#12: Prepare, survey and clean radiotherapy isolation room.
#13: Survey, inspect and inventory incoming radioactive materials.
#14: Monitor and dispose of radioactive waste.
#15: Use proper procedures for managing a radioactive spill.

Group II: Instrumentation
#16: Perform and evaluate quality control on a well counter or probe.
#17: Calibrate scintillation camera.
#18: Perform and evaluate field uniformity on the scintillation camera.
#19: Perform and evaluate detector linearity and spatial resolution on a scintillation camera.
#20: Assess performance of image recording equipment.
#21: Determine operational status of survey meter.
#22: Perform and evaluate accuracy, linearity, and geometry tests of the dose calibrator.
#23: Perform and evaluate dose calibrator constancy test.
#24: Perform and evaluate quality control procedures for SPECT camera.
#25: Perform and evaluate quality control procedures for PET system.

Group III: Clinical Procedures
#26: Maintain and operate auxiliary equipment (as described in equipment/procedures list).
#27: Schedule pt. studies, ensuring appropriate sequence of multiple procedures & interact w/staff regarding special orders.
#28: Receive patient and provide proper nursing care during nuclear medicine procedures.
#29: Communicate effectively with patient, family and staff.
#30: Provide safe and sanitary conditions.
#31: Recognize and respond to emergency conditions.
#32: Receive patient, verify patient identification and written orders for study, follow up on inappropriate orders.
#33: Obtain pertinent patient history and check procedural contradictions.
#34: Prepare patient for procedure.
#35: Select and administer the appropriate radiopharmaceutical by the proper route.
#36: Prepare proper instrument, computer & auxiliary equipment and acquire imaging procedures as indicated by protocol.
#37: Evaluate image appearance and perform any additional views as required.
#38: Process and evaluate computer generated data.
#39: Prepare and perform cardiac monitoring and/or stress testing.
#40: Prepare/administer interventional pharmacologic agent.
#41: Obtain samples and/or data for non-imaging studies.
#42: Calculate and evaluate results of non-imaging studies.

Group IV: Radiopharmacy
#43: Elute radionuclide generator; perform and evaluate quality control tests.
#44: Review the daily work schedule to plan radiopharmaceutical needs.
#45: Prepare radiopharmaceutical kits, perform quality control and evaluate results.
#46: Prepare and dispense diagnostic radiopharmaceuticals.
#47: Prepare and dispense therapeutic radiopharmaceuticals.
#48: Label blood components with a radiopharmaceutical according to protocol.
NMTCB Procedures List

**Pulmonary**
- Radioaerosol ventilation
- Xenon ventilation
- Perfusion
- Perfusion/Ventilation quantitation

**Bone/ Musculoskeletal**
- Bone scan, limited, planar
- Bone scan, whole-body, planar
- Bone scan, 2-phase
- Bone scan, 3-phase
- Bone scan, 4-phase
- Bone scan, SPECT

**Oncology**
- Ga67 tumor imaging, planar
- Ga67 tumor imaging, SPECT
- Monoclonal antibody imaging
- Peptide imaging
- Breast imaging
- Lymphoscintigraphy/sentinel lymph node localization
- Tumor imaging, PET

**Infection**
- Ga67 infection imaging
- Tagged WBC imaging
- Antibody imaging

**Renal/ Genitourinary**
- Cystogram, direct
- Effective renal plasma flow (ERPF)
- Glomerular filtration rate (GFR)
- Renal anatomy, planar
- Renal anatomy, SPECT
- Renal flow
- Renogram

**Endocrine**
- Adrenal imaging
- Parathyroid imaging
- Thyroid imaging
- Thyroid uptake
- Whole body survey for thyroid metastases

**Hematopoietic**
- Bone marrow imaging
- Plasma volume
- Red cell mass
- Red cell sequestration
- Red cell survival
- Spleen scan with labeled, denatured RBCs
NMTCB Procedures List Cont’d

**Cardiovascular**
Myocardial perfusion, planar
Myocardial perfusion, SPECT
Myocardial perfusion, gated SPECT
First pass for EF and wall motion
Gated cardiac blood pool, rest
Gated cardiac blood pool, stress
Gated cardiac blood pool, SPECT
Venogram/thrombus localization
Cardiac shunt
Cardiac PET

**Gastrointestinal**
Esophageal motility/transit
Gastric emptying (liquid/solid)
Gastroesophageal reflux
Gastrointestinal bleeding
Hemangioma
Hepatobiliary
Gall bladder ejection fraction
LeVeen shunt patency
Hepatic pump patency
Liver-spleen imaging, planar
Liver-spleen imaging, SPECT
Meckel’s diverticulum
Salivary (parotid)
Schilling determination
*H. Pylori* breath test

**Central Nervous System**
Brain flow
Brain imaging, planar
Brain imaging, SPECT
Cisternogram
CSF leak
CSF shunt patency
Brain PET

**Radionuclide Therapy**
Intracavitary
Polycythemia vera/leukemia
Thyroid carcinoma
Hyperthyroidism
Metastatic bone pain
Monoclonal antibody therapy
Embolic radiotherapy
NMTCB - Equipment List

- **Camera/ Computer Systems**
  - Camera, planar only
  - Camera, with SPECT
  - Camera, dual head, planar
  - Camera, dual head, SPECT
  - Camera, multihed (3-4 heads)
  - Camera, multicrystal
  - Attenuation correction for SPECT
  - Nuclear medicine-specific computer
  - PET system

- **Display Media**
  - Formatter, multi-imager
  - Laser printer
  - Wet film
  - Dry film
  - Video system
  - Teleradiology (modem)

- **Quality Control Equipment**
  - Flat-field flood source (fillable)
  - Co57 sheet source
  - Planar spatial resolution phantom
  - 3-dimensional SPECT phantom
  - Sealed sources, including check sources and transmission sources

- **Non-Imaging Equipment**
  - Dose calibrator
  - Ionization chamber (Cutie Pie)
  - G-M meter (Geiger counter)
  - Xenon delivery system
  - Xenon gas trap
  - Aerosol delivery system
  - Thyroid probe
  - Well counter
  - Mo99/Tc99m generator

- **Laboratory Equipment**
  - Centrifuge
  - Pipettes
  - Fume hood
  - Laminar flow hood
  - Microscope/hemocytometer

- **Patient Care Equipment**
  - Intravenous infusion pump
  - ECG monitor
  - Treadmill
  - O2 saturation monitor (pulse oximeter)
  - Defibrillator
  - Glucose meter
  - Sphygmomanometer
**Tc99m Labeled Radiopharmaceuticals**
- Mo99m/Tc99m Generators
- Tc99m sodium pertechnetate
- Tc99m oxidronate/HDP
- Tc99m medronate/MDP
- Tc99m pentetate/DTPA
- Tc99m macroaggregated albumin/MAA
- Tc99m sulfur colloid
- Tc99m disofenin/mebrofenin
- Tc99m mertiatide/MAG3
- Tc99m pyrophosphate/PYP
- Tc99m sestamibi/MIBI
- Tc99m tetrofosmin
- Tc99m succimer/DMSA
- Tc99m exametazine/HMPAO
- Tc99m bicisate/ECD
- Tc99m gluceptate
- Tc99m labeled RBCs
- Tc99m denatured radiolabeled RBCs
- Tc99m HMPAO tagged WBCs

**Iodine Labeled Radiopharmaceuticals**
- I123 sodium iodide
- I131 sodium iodide
- I131 MI BG
- I125 serum albumin/RISA
- I131 serum albumin/RISA
- I125 iothalamate

**Indium Labeled Radiopharmaceuticals**
- In111 chloride In111 pentetate (DTPA)Tc99m
- In111 oxine labeled WBCs
- In111 labeled MAB (capromab pendetide)
- In111 pentetreotide
- In111 ibritumomab tiuxetan

**Miscellaneous Diagnostic Radiopharmaceuticals**
- TI201 thallous chloride
- Ga67 gallium citrate
- Xe133 gas
- Cr51 sodium chromate labeled RBCs
- N-13 ammonia
- Rb-82 chloride
- F18 FDG
- N13 ammonia
- Rb82 chloride
- C14 urea
NMTCB - Pharmaceuticals List Cont’d

- **Therapeutic Radiopharmaceuticals**
  P32 chromic phosphate colloid
  P32 sodium phosphate
  Sr89 chloride
  Sm153 EDTMP lexidronam
  I131 sodium iodide
  Y90 ibritumomab tiuxetan
  I131 tositumomab
  Y90 microspheres

- **Interventional Pharmaceuticals**
  dipyridamole
  adenosine
  dobutamine
  aminophylline
  captopril
  enaloprilat
  furosemide
  insulin
  acetazolamide
  cholecystokinin/sincalide/CCK
  morphine
  cimetidine/ranitidine/famotidine

- **Miscellaneous Non-Radioactive Agents**
  ACD solution
  heparin
  ascorbic acid
  hetastarch
  contrast media
  vitamin B12
  Lugol’s solution/SSKI
  TSH
  EDTA
  Lidocaine
  Lidocaine (EMLA) cream
  atropine
  recombinant human TSH
  diphenhydramine
• Curriculum Content

1) Methods of Patient Care and Medical Ethics/Law
2) Basic Principles of Radiation Safety and Protection
3) Cross-Sectional Anatomy
4) Nuclear Pharmacy and Pharmacology
5) Nuclear Medicine Instrumentation and QC/QA
6) Nuclear Medicine Statistics and Math
7) Nuclear Medicine Procedures
8) Nuclear Medicine and Radiation Physics
9) Healthcare Management
10) Radiation Biology
11) Nuclear Medicine Computer Applications and Medical Informatics
12) Health Sciences Research Methods
13) Registry Review
14) Clinical Practicum

END of STUDENT HANDBOOK