

1 SCOPE OF PRACTICE
2 FOR THE NUCLEAR MEDICINE TECHNOLOGIST
3 2001

4 President's Task Force

5 Society of Nuclear Medicine Technologist Section
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7 *A Society of Nuclear Medicine Technologist Section (SNM-TS) presidential*
8 *task force established in the Spring of 2001 developed the revised SNM-TS*
9 *Scope of Practice for nuclear medicine technologists. The task force*
10 *consisted of the following individuals: Danny Basso CNMT, Mickey Clarke*
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14 *chaired by Frances Keech RT(N).*

15
16 The documents used in the revision and development of these guidelines
17 were the SNM-TS *Performance and Responsibility Guidelines for the*
18 *Nuclear Medicine Technologist (1998), Nuclear Medicine Technology*
19 *Certification Board (NMTCB) Report: Equipment and Procedures in*
20 *Current Practice (2001), NMTCB Critical Task Analysis Report (2000),*
21 *Joint Review Committee Nuclear Medicine Technologist (JRCNMT)*
22 *Essentials and Guidelines for an Accredited Educational Program for the*
23 *Nuclear Medicine Technologist (2000), American Registry of Radiologic*
24 *Technologists (ARRT) Task Analysis (2000), and American Society of*
25 *Radiologic Technologists (ASRT) Practice Guidelines (1998). This*
26 *document is not intended to modify or alter existing tort law, rather it*

27 should serve as a concise outline of nuclear medicine technology skills and
28 responsibilities.

29

30 **Nuclear Medicine Technology**

31 Nuclear medicine technology is the medical specialty that utilizes unsealed
32 radioactive materials in the diagnosis and treatment of disease. This practice
33 includes the administration, imaging, and/or counting of diagnostic
34 radiopharmaceuticals to demonstrate organ and molecular function, as well
35 as the delivery of therapeutic radiopharmaceuticals to treat a number of
36 pathologies.

37

38 The practice of nuclear medicine technology encompasses
39 multi-disciplinary skills, which use rapidly evolving instrumentation,
40 radiopharmaceuticals, and techniques. The responsibilities of the nuclear
41 medicine technologist include an empathetic and instructional approach to
42 patient care; the preparation, calibration, and administration of
43 radiopharmaceuticals and pharmaceuticals (under the direction of an
44 authorized user); the performance of quality control procedures; and the
45 operation of imaging, laboratory, and computer instrumentation.

46

47 In order to perform these tasks, the nuclear medicine technologist must
48 successfully complete didactic and clinical training. Recommended course
49 work includes, but is not limited to: anatomy, physiology, pathophysiology,
50 chemistry, physics, mathematics, computer applications, biomedical
51 sciences, ethics, and radiation health and safety. Direct patient contact hours
52 are obtained by training in a clinical setting.

53

54 Formal education programs in nuclear medicine technology are accredited
55 by the *Joint Review Committee on Educational Programs in Nuclear*
56 *Medicine Technology* (JRCNMT) as well as institutional accreditation
57 programs. Graduates of accredited programs are eligible for certification
58 examination offered by the *Nuclear Medicine Technology Certification*
59 *Board* (NMTCB) and/or the *American Registry of Radiologic Technologists*
60 (ARRT).

61

62 The spectrum of nuclear medicine technology skills and responsibilities
63 varies widely across the country and often goes beyond the basic skills
64 outlined in the technologist's initial education and certification. Practice
65 components presented in this document provide a basis for establishing the
66 areas of knowledge and performance for the nuclear medicine technologist.
67 It is assumed that for all activities included in this scope of practice, the
68 nuclear medicine technologist has received the proper training (in
69 compliance with individual state and institutional requirements) supported
70 with the proper documentation of initial and continued competency in those
71 practices and activities. Continuing education is a necessary component in
72 maintaining the skills required to perform all duties and tasks of the nuclear
73 medicine technologist in this ever-evolving field of new equipment,
74 radiopharmaceuticals, and applications.

75

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

78

79 **Patient Care:** Requires the exercise of judgment to assess and respond to
80 the patient's needs prior to, during, and after procedures in the nuclear
81 medicine department.

82

83 **Quality Control:** Requires the evaluation and maintenance of a quality
84 control program for all instrumentation to ensure its proper performance and
85 stability.

86

87 **Diagnostic Procedures:** Requires the utilization of appropriate techniques
88 to ensure quality diagnostic images and/or laboratory results.

89

90 **Radiopharmaceuticals:** Involves the procurement, preparation, quality
91 control, dose calculation, identification, documentation, administration,
92 disposal, storage, and safe handling of radioactive materials used by the
93 nuclear medicine technologist.

94

95 **Radionuclide Therapy:** Assists an authorized user in the application and
96 management of radiotherapeutic procedures.

97

98 **Radiation Safety:** Educates the public while practicing techniques that will
99 minimize radiation exposure to the patient, general public, and health care
100 personnel consistent with the concept of ALARA (as low as reasonably
101 achievable).

102

103 **I. Patient Care**

104 A. A nuclear medicine technologist provides patient care:

105 1. By providing for proper comfort and care of the patient prior to, during,
106 and after a procedure, including, but not limited to, the monitoring of
107 intravenous lines (i.e., central lines, mediports, Peripherally Inserted
108 Central Catheter (PICC) lines), oxygen supplies, drains, and patients
109 who are under sedation.

110

111 2. By establishing and maintaining proper communication with patients
112 (e.g., proper introduction, appropriate explanation of the procedure, etc.).

113

114 3. By behaving in a professional manner in consideration of patients' rights
115 and resulting in the provision of the highest quality patient care possible.

116

117 4. By providing a safe and sanitary working environment for patients and
118 the general public, using proper infection control practices in compliance
119 with accepted precaution policies.

120

121 5. By recognizing and responding to an emergency situation at a level
122 commensurate with one's training and competency.

123

124 B. A nuclear medicine technologist prepares the patient for an examination:

125 1. By verifying patient identification, pregnancy status, breast-feeding
126 status, and written orders for the procedure.

127

128 2. By ensuring that informed consent has been obtained, in the method
129 prescribed by the institution, whenever necessary.

130

131 3. By confirming that the indication for the procedure is appropriate and
132 consulting with the authorized user and/or referring physician whenever
133 necessary in order to ensure that the proper procedure is performed.

134

135 4. By obtaining a pertinent patient history.

136

137 5. By ensuring that any pre-procedural preparation has been completed,
138 including, but not limited to, fasting, hydration, the taking of thyroid
139 blocking compounds, voiding, bowel cleansing, and suspension of
140 interfering medications.

141

142 6. By explaining the procedure to the patient and/or family and, where
143 applicable, to the parents and/or legal guardian including, but not limited
144 to, the procedure, patient involvement, length of study, and radiation
145 safety issues.

146

147 7. By collecting samples for laboratory procedures and performing pertinent
148 waived laboratory procedures (e.g., fasting blood sugar, urine pregnancy
149 tests).

150

151 C. A nuclear medicine technologists performs administrative procedures:

152 1. By maintaining an appropriate inventory of medical/surgical supplies,
153 radiopharmaceuticals, storage media, and other items required to perform
154 procedures in a timely manner.

155

- 156 2. By scheduling patient procedures appropriate to the indication and in the
157 proper sequence.
158
- 159 3. By maintaining appropriate records of administered radioactivity, quality
160 control procedures, patient reports, and other required records.
161
- 162 4. By developing and revising, when necessary, policies and procedures in
163 accordance with applicable regulations.
164
- 165 5. By actively participating in total quality management/continuous quality
166 improvement programs (i.e., age-specific competencies, patient
167 education, and patient restraint and immobilization).
168

169 **II. Quality Control- Nuclear Instrumentation**

170 A nuclear medicine technologist ensures the proper performance of the
171 imaging systems, storage media, and radiation detection and counting
172 devices, including, but not limited to, scintillation cameras, dose
173 calibrators, survey instruments, NaI(Tl) scintillation probes and well
174 counters, and data processing and image production devices.
175

176 **III. Diagnostic Procedures**

177 A. A nuclear medicine technologist performs imaging procedures:
178

- 179 1. By preparing, evaluating and properly administering the appropriate
180 radiopharmaceuticals and/or pharmaceuticals (under the direction of an

181 authorized user).

182

183 2. By establishing and/or properly maintaining venous access routes of
184 various configurations (in accordance with hospital policies and
185 procedures).

186

187 3. By selecting the appropriate imaging or data collection parameters.

188

189 4. By administering radiopharmaceuticals/pharmaceuticals through various
190 routes of administration, including, but not limited to: oral, intravesical,
191 inhalant, intravenous, intramuscular, subcutaneous, and intradermal
192 (under the direction of an authorized user).

193

194 5. By positioning the patient for imaging, adapting the protocol to patient
195 limitations, and obtaining images.

196

197 6. By positioning and verifying the placement of electrocardiographic leads.

198

199 7. By reviewing images to ensure that required information has been
200 collected, processed properly, and is of the highest quality.

201

202 8. By assisting in cardiac stress tests procedures when performed in
203 conjunction with nuclear medicine procedures.

204

205 9. By performing data collection, processing, and analysis.

206

207 10. By archiving data to and from storage media.

208

209 B. A nuclear medicine technologist performs non-imaging in vivo and/or
210 radioassay studies:

211 1. By operating laboratory equipment.

212

213 2. By preparing dosages and standards.

214

215 3. By collecting the appropriate specimen for procedures using standard
216 precautions.

217

218 4. By collecting, validating and documenting the data.

219

220 5. By managing biohazardous, chemical, and radioactive waste in
221 accordance with applicable regulations and specific facility policies.

222

223 **IV. Radiopharmaceuticals**

224 A. A nuclear medicine technologist obtains and maintains
225 radiopharmaceutical products and adjunct supplies.

226

227 B. A nuclear medicine technologist properly prepares and administers
228 diagnostic radiopharmaceuticals under the direction of an authorized
229 user in accordance with all federal, state and institutional guidelines.

230

231 **V. Radionuclide Therapy**

232 A nuclear medicine technologist properly prepares and administers
233 therapeutic radionuclides and radiopharmaceuticals under the direction
234 of an authorized user in accordance with federal, state, and institutional
235 regulations.

236

237 **VI. Radiation Safety**

238 A nuclear medicine technologist performs all procedures utilizing ionizing
239 radiation safely and effectively:

240 1. By maintaining compliance with all applicable regulations.

241

242 2. By performing appropriate radioactive contamination monitoring and any
243 necessary decontamination procedures.

244

245 3. By disposing of radioactive waste in accordance with federal, state, and
246 institutional regulations

247

248 4. By participating in programs designed to instruct other personnel about
249 radiation hazards and principles of radiation safety.

250

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