

Planning a Clinical PET Center

For each of the following questions, select the best answer. Then circle the reader service card number that corresponds to the answer you have selected. Keep a record of your responses so that you can compare them with the correct answers, which will be published in the next issue of the *Journal*. Answers to these test questions should be returned on the reader service card no later than June 1, 1991. Supply your name, address, and VOICE number in the spaces provided on the card. Your VOICE number appears on the upper left hand corner of your *Journal* mailing label. No credit can be recorded without it. A 70% correct response rate is required to receive 0.1 CEU credit for this article. Members participating in the continuing education activity will receive documentation on their VOICE transcript, which is issued in March of each year. Nonmembers may request verification of their participation but do not receive transcripts.

A. Requirement(s) for the establishment of a clinical PET center is(are):

- 101. financial.
 - 102. knowledge of PET technology.
 - 103. administrative support.
 - 104. a general focus on the proposed program.
 - 105. 101, 102, and 103.
 - 106. all of the above.
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B. Recent advances have simplified the operation and reliability of PET imaging.

- 107. True
 - 108. False
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C. The major barrier(s) for widespread use of PET is(are):

- 109. financial cost.
 - 110. equipment availability.
 - 111. complexity of equipment.
 - 112. site location.
 - 113. 109 and 111.
 - 114. 109, 110, and 111.
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D. A PET Startup Team is recommended for helping to establish a PET program. Which of the following is NOT necessary on this team?

- 115. senior physician
 - 116. medical examiner
 - 117. chief technologist
 - 118. radiopharmacist
 - 119. PET consultant
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E. Generating support for the medical staff is a responsibility of which Startup Team member?

- 120. chief technologist
 - 121. PET consultant
 - 122. medical physicist
 - 123. administrator
 - 124. senior physician
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F. Addressing radiation safety concerns is a responsibility of which Startup Team member?

- 125. chief technologist
 - 126. Radiation Safety Officer
 - 127. medical physicist
 - 128. senior physician
 - 129. PET consultant
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G. Projection of the operating expenses is a responsibility of which Startup Team member?

- 130. chief technologist
 - 131. PET consultant
 - 132. medical physicist
 - 133. senior physician
 - 134. administrator
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H. All states require a certificate of need (CON) for PET technology.

- 135. True
 - 136. False
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I. The PET Startup Team is responsible for assessing:

- 137. space requirements.
 - 138. staffing requirements.
 - 139. financial requirements.
 - 140. 137 and 138.
 - 141. all of the above.
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J. (An) appropriate method(s) for obtaining PET agents is(are):

- 142. unit doses of ¹⁸[F]fluorodeoxyglucose.
 - 143. fully staffed and equipped radiochemistry lab and cyclotron.
 - 144. a generator system.
 - 145. 143 and 144.
 - 146. all of the above.
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K. Which of the following is not necessary or true with regard to obtaining a CON?

- 147. time (several months for a decision by the state health planning agency)
 - 148. money (one-tenth of one percent of the program's cost is the fee)
 - 149. special referendum held by the institution's county.
 - 150. CON may not be necessary, check state laws.
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L. The method(s) of acceptance testing the cyclotron's output is(are) by:

- 151. foil rupture.
- 152. bombardment duration.
- 153. Faraday cup irradiations.
- 154. all of the above.

M. *The cyclotron registration application include:*

- 155. emergency procedures.
- 156. expected radiation field map.
- 157. training program description.
- 158. calibration procedures.
- 159. 155, 156, and 158.
- 160. all of the above.

N. *For each proposed PET radiopharmaceutical used, the institution must always submit an IND.*

- 161. True
- 162. False

O. *The following skilled personnel are essential to running the PET program:*

- 163. a chemist with a BS degree.
- 164. a nurse.
- 165. a physicist.
- 166. a radiopharmacist.
- 167. two technologists.
- 168. two chemists with BS degrees.
- 169. 163, 164, 165, 166, and 167.
- 170. 164, 165, 166, 167, and 168.

P. *Minimum space requirements for a PET facility is — square feet.*

- 171. 5,000
- 172. 6,000
- 173. 7,000
- 174. 8,000
- 175. 9,000

Q. *Installation of the PET scanner requires — wk.*

- 176. 1–2
- 177. 3–4
- 178. 5–6
- 179. 7–8

R. *Additional shielding is necessary in the following areas:*

- 180. radioactive waste cave
- 181. scanning room
- 182. storage area for phantoms
- 183. pneumatic transfer and receiving stations
- 184. 180, 182, and 183
- 185. all of the above

S. *Minimizing technologist exposure is done through:*

- 186. shielded infusion pumps.
- 187. remote video monitoring systems.
- 188. syringe shields designed for PET.
- 189. 186 and 188.
- 190. all of the above.

T. *The robotic system offers a more reliable and flexible means for achieving radiochemical purity.*

- 191. True
- 192. False

U. *A "hot cell" is:*

- 193. necessary for superior shielding.
- 194. expensive.
- 195. valuable for decreasing the chemist's exposure.
- 196. needed for manually synthesizing radiochemicals.
- 197. 193, 194, and 195.
- 198. all of the above.

V. *High-quality tracers are necessary for PET imaging. All of the following except — is(are) necessary for the production and quality assurance of radiopharmaceuticals.*

- 199. high-pressure liquid chromatography
- 200. gas chromatography
- 201. optical interferometer
- 202. thin-layer chromatography
- 203. 200 and 201

W. *One gram of ¹³C-powder precursor will cost:*

- 204. \$250.
- 205. \$500.
- 206. \$750.
- 207. \$1,000.

X. *Ground floor installation is highly recommended for the newer cyclotron models due to their weight. The cyclotron weighs ~ — lbs.*

- 208. 60,000.
- 209. 120,000.
- 210. 180,000.
- 211. 240,000.

Y. *Communication is facilitated through the use of — within the PET department.*

- 212. patient explanation
- 213. pneumatic transfer system
- 214. synchronous clock
- 215. intercom stations