U.S. Radiologic Technologists Study

A collaborative effort between the University of Minnesota School of Public Health, National Cancer Institute, and American Registry of Radiologic Technologists

RADIOISOTOPE PROCEDURES QUESTIONNAIRE

Instructions: This questionnaire is focused on: · Use blue or black ink • DIAGNOSTIC radioisotope procedures: (Section 1, pages 1-5) and · Print legible numbers: • THERAPEUTIC radioisotope procedures: (Section 2, pages 6-8). Mark an X in the box: Right Wrong • Do not make any stray marks on this form. If you have comments, please write them on a separate piece of paper. Some information from the past may be difficult to recall. Just do your best. Even if not exact, your best estimates are valuable to the study. **SECTION 1: DIAGNOSTIC RADIOISOTOPE PROCEDURES** Did you ever perform or assist with DIAGNOSTIC RADIOISOTOPE procedures at least once a WEEK for a year or more? ■ NO → Go to Page 6, Question 11. ☐ YES (Please continue with survey.) 2. What years did you FIRST and LAST perform or assist with DIAGNOSTIC RADIOISOTOPE procedures at least once a WEEK? FIRST YEAR LAST YEAR (Enter current year if still working with procedures.) **Number of YEARS** 1945-1964 1965-1979 1980-1989 2000-2009 1990-1999 3. During each time period, how many YEARS did you perform or assist with DIAGNOSTIC RADIOISOTOPE procedures at least once a week? **Total Number of TIMES per WEEK** 1945-1964 1965-1979 1980-1989 1990-1999 2000-2009 4. During each time period, how many total TIMES per WEEK did you usually perform or assist with

NOTIFICATION TO RESPONDENT OF ESTIMATED BURDEN

DIAGNOSTIC RADIOISOTOPE procedures?

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: NIH, Project Clearance Branch, 6705 Rockledge Drive, MSC 7974, Bethesda, MD 20892-7974, ATTN: PRA (0925-0405). Do not return the completed form to this address.

5. For the following DIAGNOSTIC RADIOISOTOPE procedures, please provide your best estimate of how many <u>TIMES per WEEK</u> you performed or assisted with these procedures during each time period.

Please provide estimates for all procedures you performed in each group (e.g. all thyroid scans) and also for procedures within each group that you performed using the selected radiopharmaceutical listed. If you used more than one radiopharmaceutical for a given procedure, please answer separately for each radiopharmaceutical. NOTE: Leave all time period boxes blank if you NEVER worked with a procedure; leave specific time period boxes blank if you worked with a procedure less than once a week during that time period.

DIAGNOSTIC			How many TIMES per WEEK did you perform these procedures in each time period?						
PROCEDURE	RADIOPHARMACEUTICAL	NEVER	1945-1964			1990-1999			
All Thyroid scan	ıs								
Thyroid scan									
myroid scan	¹³¹ I-sodium iodide	🗖							
	¹²³ I-sodium iodide	. 🗆							
	99m Tc-pertechnetate	. 🗆							
All Thyroid upta	kes								
Thyroid uptake	¹³¹ I-sodium iodide								
	¹²³ I-sodium iodide	. 🗆							
All Liver scans .									
Liver scan	¹⁹⁸ Au-Colloid								
	^{99m} Tc -SC								
All Brain scans.									
Brain scan	¹³¹ ISHA								
	¹⁹⁷ Hg-, ²⁰³ Hg-chlormerodrin								
	^{99m} Tc (pertechnetate, DTPA, HMPAO, etc.)								
All Renal scans									
Renal scan	¹⁹⁷ Hg-, ²⁰³ Hg-chlormerodrin								
	¹³¹ I-hippurate								
	^{99m} Tc (DTPA, MAG3, DMSA, etc.)								
All Bone scans.									
Bone scan	85 Sr-chloride								
	^{99m} Tc (phosphate, MDP, etc.)								
All Lung perfus	ion scans								
Lung perfusion	¹³¹ I-MAA								
scan	^{99m} Tc (MAA, HAMicrospheres, etc.)								

DIAGNOSTIC PROCEDURE,			How many TIMES per WEEK did you perfo these procedures in each time period?						
cont.	RADIOPHARMACEUTICAL	NEVER				1990-1999			
All Lung ventila	tions	. 🗆							
Lung ventilation	¹³³ Xe								
	99m Tc-DTPA (aerosol)								
All Bone marrow scans									
Bone marrow scan	¹⁹⁸ Au-Colloid								
	^{99m} Tc-SC								
All Gallbladder	scans with 99m Tc (HIDA, DISIDA, etc.)								
All GI bleeding	scans with 99m Tc (labeled RBC, pertechnetate, SC, etc.)								
All Cardiac scar	18								
Cardiac scan	²⁰¹ TI-chloride								
	99m Tc-MIBI (1 day)								
	99m Tc-MIBI (2 day)								
	^{99m} Tc (labeled RBC, phosphate, etc.)								
All Tumor and a	bscess localizations								
Tumor and abscess	⁶⁷ Ga-citrate								
localization	¹¹¹ In (pentreotide, WBC, etc.)								
All Pancreas sc	ans								
All PET scans (Brain) with 18 F-FDG								
All PET scans (except brain)								
PET scan (except brain)	¹⁸ F-FDG								
(except brain)	82 Rb-chloride								
Please list other D	IAGNOSTIC RADIOISOTOPE procedures b	pelow:				did you per time period			
DIAGNOSTIC P	·		1945-1964			1990-1999			
1.									
2.		=							
3.									

The following questions are about your work patterns and practices while performing or assisting with DIAGNOSTIC RADIOISOTOPE procedures. Please complete all questions for each time period.

				1945-1964	1965-1979	1980-1989	1990-1999	2000-2009
6a.	DIA	you ever prepare radiopharmace GNOSTIC procedures? Do NOT	include if prepared					
	by a	radiopharmacy.	Never If NEVER, go to Question 7a.	☐ No ☐ Yes				
	6b.	How many TIMES per WEEK die radiopharmaceuticals?	d you prepare					
	6c.	When you prepared radiopharn use any radiation protection?	naceuticals, did you Never If NEVER, go to Question 7a.	☐ No ☐ Yes	□ No □ Yes	□ No □ Yes	□ No □ Yes	□ No □ Yes
	6d.	Check all of the following that y more than 50% of the time while radiopharmaceuticals: lead shielded vial lead shielded syringe lead apron fume hood L-Block, L-shield or lead L other (specify)	preparing					
7-	D:4	and the same and t	- "2	1945-1964	1965-1979	1980-1989	1990-1999	2000-2009
ra.	Dia	you ever elute the 99mTc generate	Never If NEVER, go to Question 8a.	☐ No ☐ Yes	□ No □ Yes	☐ No ☐ Yes	☐ No ☐ Yes	□ No □ Yes
	7b.	How many TIMES per WEEK die generator?	d you elute the ^{99m} Tc					
	7c.	When you eluted the 99mTc generalization protection?	erator, did you use any Never If NEVER, go to Question 8a.	☐ No ☐ Yes	□ No □ Yes	□ No □ Yes	□ No	□ No
	7d.	Check all of the following that y more than 50% of the time while generator: lead shielded vial	e eluting the 99mTc					

8a.	Did you ever inject patients with a DIAGNOSTIC RADIOISOTOPE? Never If NEVER, go to Question 9a.	□ No □ Yes	☐ No ☐ Yes	☐ No ☐ Yes	☐ No ☐ Yes	□ No □ Yes
	8b. How many TIMES per WEEK did you inject patients with a radioisotope?					
	8c. When you injected patients, did you use any radiation protection? Never If NEVER, go to Question 9a.	□ No □ Yes	☐ No ☐ Yes	□ No □ Yes	□ No □ Yes	☐ No ☐ Yes
	8d. Check all of the following that you typically used more than 50% of the time while injecting patients: lead shielded syringe		_ _ _	_ _ _		_ _ _
		1945-1964	1965-1979	1980-1989	1990-1999	2000-2009
9a.	When you assisted patients for DIAGNOSTIC RADIOISOTOPE examinations, did you use any radiation protection? Never If NEVER, go to Question 10a	□ No	□ No □ Yes	□ No □ Yes	□ No □ Yes	□ No
	9b. Check all of the following that you typically used or did more than 50% of the time while assisting patients: lead apron					
	moved more than 3 feet away from patient	_				
10a	. When you imaged patients, did you use any radiation protection? Never If NEVER, go to Question 11a	1945-1964 □ No □ Yes	1965-1979 No Yes	1980-1989 No Yes	1990-1999 No Yes	2000-2009 No Yes
	10b. Check all of the following that you typically used or did more than 50% of the time while imaging patients lead apron	: .				
	moved more than 3 feet away from patient other (specify)					

1945-1964 1965-1979 1980-1989 1990-1999 2000-2009

SECTION 2: THERAPEUTIC RADIOISOTOPE PROCEDURES

11. Did you ever perform or assist with THERAPEUTIC RADIOISOTOPE procedures at least once a

□ NO → STOP (Thank you. Please return survey.)

12. What years did you FIRST and LAST perform or assist with THERAPEUTIC

MONTH for a year or more?

☐ YES (Please continue.)

	RADIO	OISOT	OPÉ p	rocedures <u>at l</u>	east once a	MONT	<u>H</u> ?				
				FIRST YEAR		LAS	ST YEAR (Enter	current year if still wo	orking with procedure	es.)	
									lumber of YE	\RS	
12	Durin	na eac	h tima	period, how n	nany VEARS	did	1945-196		1980-1989	1990-1999	2000-2009
13.				ssist with THE		uiu					
				procedures at		month	?				
14.	Durin	ıg eac	h time	period, how n	nany total			Total Numb	er of TIMES p	er MONTH	
		•		H did you usu		or	1945-1964	1965-1979	1980-1989	1990-1999	2000-2009
				APEUTIC RAD	IOISOTOPE						
	proce	edures	6?								
	many listed, in the NO bla	TIMES durin section OTE: Leank if years	S per No general per	THERAPEUTION MONTH you pentime period. Sow. Ill time period bowned with a process.	rformed or a If you used oxes blank if	nssiste more to you NE	d with thes han one ra	se procedure idionuclide for ed with a proceduring that tim How many TIM	s, with the spor a given pro edure; leave so the period. ES per MONTH	pecific radio ocedure, plea specific time	nuclide ase include period boxes
	DISEA	EDURI	E OR	RAD	OIONUCLIDE	NEVER	1945-1964		edures in each 1980-1989	1990-1999	2000-2009
							1040 1004	1000 1070	1000 1000	1000 1000	2000 2000
	Hypert	thyroid	lism	¹³¹ [.							
	Thyroi	d cano	er	¹³¹ [.							
	Thyroi	d abla	tion	¹³¹ [.							
	Follow	up aft	er								
				¹³¹ [
	-										
	Malign	ant ef	fusion.	¹⁹⁸ A	u-Colloid						
	Bone r	metast	ases	¹⁵³ S	m						
	Non-H	lodgkir	ı's lym _l	phoma							
	or liver	r tumo	r	⁹⁰ Y .							
		e list ot	her TH	IERAPEUTIC F	ADIOISOTO	PE					
				ase below:		_		How many TIMI	ES per MONTH dures in each		m
	THE	RAPE	UTIC PI	ROCEDURE	RADIONUCL	.IDE	1945-1964		1980-1989	1990-1999	2000-2009
	1.										
	"-				i						
	2.										
	3.										
	J. [J L	'					

The following questions are about your work patterns and practices while performing or assisting with THERAPEUTIC RADIOISOTOPE procedures. Please complete all questions for each time period.

16a Did you over propare radiopharmace	uticals for	1945-1964	1965-1979	1980-1989	1990-1999	2000-2009
16a. Did you ever prepare radiopharmace THERAPEUTIC procedures? Do NO						
by a radiopharmacy.						
by a radiopharmacy.	Never	☐ No	□ No	□ No	□ No	□ No
	If NEVER, go to Question 17a.	☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes
16b. How many TIMES per MONTH di	d vou prepare					
radiopharmaceuticals?	a you prepare					
radiopha massansais i						
16c. When you prepared radiopharma	socutions did you					
use any radiation protection?			□ No	☐ No	□ No	□ No
use any radiation protection:	Never	☐ No☐ Yes	☐ Yes	☐ Yes	☐ Yes	☐ Yes
	If NEVER, go to Question 17a.	u res	u res	u res	u res	u res
16d. Check all of the following that yo	ou typically used					
more than 50% of the time while						
maceuticals:						
lead shielded vial						
lead shielded syringe						
lead apron						
fume hood						
L-Block, L-shield or lead L						
other (specify)						
other (specify)		_	· U	· u	- Ц	· • ·
		19/5-196/	1065_1070	1080_1080	1000-1000	2000-2009
17a Did you ever administer oral ¹³ 1/2	Nover	1945-1964	1965-1979	1980-1989	1990-1999	2000-2009
17a. Did you ever administer oral ¹³¹ I?	Never	☐ No	☐ No	☐ No	□ No	□ No
17a. Did you ever administer oral ¹³¹ l?	■ Never If NEVER, go to Question 18a	☐ No				
17a. Did you ever administer oral ¹³¹ I? 17b. How many TIMES per MONTH di	If NEVER, go to Question 18a	☐ No	☐ No	☐ No	□ No	□ No
•	If NEVER, go to Question 18a	☐ No	☐ No	☐ No	□ No	□ No
17b. How many TIMES per MONTH di	If NEVER, go to Question 18a	☐ No	☐ No	☐ No	□ No	□ No
17b. How many TIMES per MONTH di	If NEVER, go to Question 18a	☐ No	☐ No	☐ No	□ No	□ No
17b. How many TIMES per MONTH di oral ¹³¹ l?	If NEVER, go to Question 18a	☐ No	☐ No	☐ No	□ No	□ No
17b. How many TIMES per MONTH di- oral ¹³¹ I? 17c. When you administered oral ¹³¹ I,	If NEVER, go to Question 18add you administer	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	□ No □ Yes	□ No □ Yes	□ No □ Yes	□ No □ Yes
17b. How many TIMES per MONTH di- oral ¹³¹ I? 17c. When you administered oral ¹³¹ I,	If NEVER, go to Question 18ad d you administer did you use any Never	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH divoral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you 	If NEVER, go to Question 18ad d you administer did you use any Never If NEVER, go to Question 18ad ou typically used more	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH divoral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admin 	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH die oral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admining lead apron	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH divoral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admin 	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH die oral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admining lead apron	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH die oral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admining lead apron	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH die oral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admining lead apron	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH die oral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admining lead apron	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH die oral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admining lead apron	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH die oral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admining lead apron	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH die oral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admining lead apron	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No
 17b. How many TIMES per MONTH die oral ¹³¹I? 17c. When you administered oral ¹³¹I, radiation protection? 17d. Check all of the following that you than 50% of the time while admining lead apron	If NEVER, go to Question 18ad you administer did you use any Never If NEVER, go to Question 18ad you typically used more nistering oral 1311:	☐ No☐ Yes☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No☐ No	No Yes	□ No □ Yes □ No	No Yes	□ No □ Yes □ No

18a. Did you ever inject patients with a	THERAPEUTIC	1945-1964	1965-1979	1980-1989	1990-1999	2000-2009
RADIOISOTOPE?	Never If NEVER, go to Question 19a.	□ No □ Yes	☐ No ☐ Yes	☐ No ☐ Yes	☐ No ☐ Yes	□ No □ Yes
18b. How many TIMES per MONTH of with the radioisotope?	lid you inject patients					
18c. When you injected patients with you use any radiation protection						
	■ Never If NEVER, go to Question 19a.	☐ No ☐ Yes				
18d. Check all of the following that y than 50% of the time while injection	cting patients:					
lead apron						
lead shielded syringe						
other (specify)						
19a. When you assisted patients for THE RADIOISOTOPE procedures, did yo		1945-1964	1965-1979	1980-1989	1990-1999	2000-2009
protection?	☐ Never	□ No	□ No	☐ No	□ No	☐ No
	If NEVER, end of survey. Thank you.	☐ Yes	☐ Yes	Yes	☐ Yes	☐ Yes
19b.Check all of the following that you did more than 50% of the time very patients:						
lead apron						
moved more than 3 feet aw	ay from patient					
other (specify)						

Thank you!