



## **RADIOLOGIST EXTENDER SALARIES AND FUNCTIONS 2008**

**A Nationwide Survey of Registered Radiologist Assistants and Radiology Practitioner Assistants  
Conducted by  
The American Society of Radiologic Technologists**

**December 2008**

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## Radiologist Extender Salaries

### Executive Summary

In early April of 2008 an invitation to participate in a survey of the salaries and functions of radiologist extenders was sent to each of the 68 R.T.s who at that time held the American Registry of Radiologic Technologists (ARRT) R.R.A. certificate and to each of the 297 ARRT registrants who also was registered with the Certification Board for Radiology Practitioner Assistants, or CBRPA. A total of 29 of the invitees held both certificates. Each invitation included a link to the Web page for an online version of the questionnaire. Respondents could request a hard copy of the questionnaire, but no one chose this option. A reminder note was sent in mid-April.

By the end of April, 49 respondents had completed the questionnaire online. This represented an overall return rate of 15%. Broken down further, 28%-37% of the R.R.A.s to whom invitations were sent and 10%-12% of R.P.A.s responded.

About one-half (49%) of these radiologist extenders work primarily in a community hospital and about one-third work in a group radiology practice (18%), or in a private radiology practice (12%). A majority of respondents work at facilities that provide all of the eight named services, in addition to other services. None of the radiologist extenders who responded to this survey appear to be involved in practices specializing in advanced modalities. The majority (53%) of their workplaces are located in an urban area; about one-third (37%) practice in suburban areas, and only 10% in rural areas.

About one-half of the respondents (49%, including both respondents who hold dual R.R.A. and R.P.A. certification) list radiology practitioner assistant as their primary title or position. The next most common title (39%) is radiologist assistant and about 10% currently are not employed as a radiologist extender.

The large majority had been employed as a radiographer (42%) or in some other radiologic technology specialty (46%) before beginning practice as a radiologist extender; about 10% listed "management" as their prior sphere of employment. Mean years of practice in their prior primary discipline was about 11.5 years. Mean years of practice as an R.R.A. or R.P.A. was 2.6 years among the R.R.A.s and 4.0 years among R.P.A.s, but this difference was not statistically significant.

All of the respondents who are currently practicing as R.R.A.s have at least a bachelor's degree, compared with 62.5% of practicing R.P.A.s and 50% of respondents who are not currently practicing as radiologist extenders. The difference between R.R.A.s and R.P.A.s in this respect is statistically significant, as is the difference between R.R.A.s and those not currently practicing in either role.

These radiologist extenders are predominantly (78%) salaried employees of the practice for which they work; 9% are contracted or leased employees of the practice and 6.5% are hospital employees supervised by a nonhospital-employed radiologist. The group radiology practice pays the salary of three-fourths (76%) of these R.R.A.s and R.P.A.s and "the facility within which I practice" pays salaries for about 20% of respondents. R.R.A.s and R.P.A.s did not differ substantially or statistically significantly in this respect.

Mean base annual salary is \$102,972 among the R.R.A.s who reported their salaries and \$95,027 among reporting R.P.A.s; mean salary is \$85,100 for the two respondents who are not currently practicing as radiologist extenders and who answered this question. The differences among the three subgroups were not statistically significant.

## Radiologist Extender Survey 2008

Respondents were asked to: "Please describe the procedures or functions you perform most frequently that are *not* performed by "regular" radiographers or that would require a higher level of supervision if performed by a radiographer not certified as a radiologist extender." They also were asked to "Indicate the frequency with which you perform that procedure or function, and the level of supervision under which it is performed."

The functions reported by the survey respondents were organized according to the Clinical Activities section of the January 2005 ARRT Registered Radiologist Assistant Role Delineation document. All functions were grouped into 3 sections for comparative purposes: fluoroscopic examinations, procedures requiring contrast media administration and needle or catheter placement and additional clinical procedures.

There were only a few statistically reliable differences between respondents practicing as R.R.A.s and those practicing as R.P.A.s in which procedures/functions were mentioned, the levels of supervision under which the various procedures or functions were performed or the frequency with which they were performed. In particular, 9 (50%) of the 18 R.R.A.s who mentioned any procedures or functions indicated that they perform small bowel studies, compared with 3 (13.6%) of the 22 R.P.A.s. Further, 8 (44.4%) of the R.R.A.s but only 1 (4.5%) of the R.P.A.s perform venous catheter placement for dialysis. Finally (with respect to differences in percent performing the various procedures), 4 (22.2%) of the R.R.A.s but none (0.0%) of the R.P.A.s indicate that they perform breast needle localization.

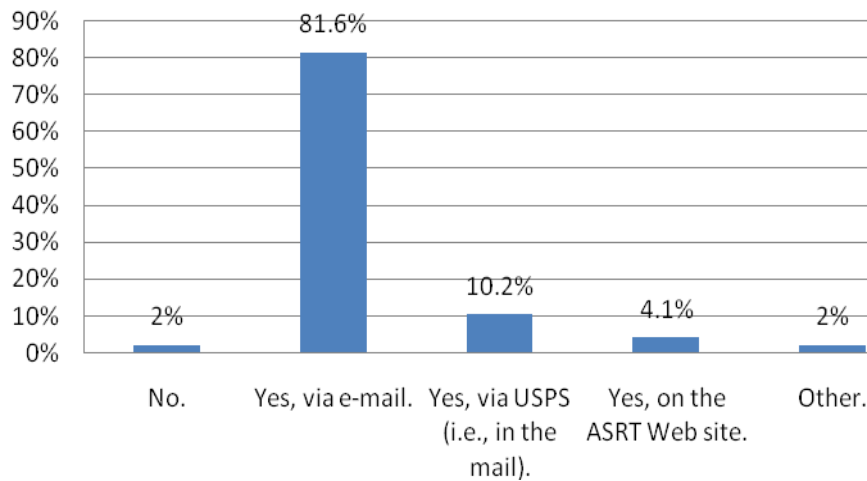
Due in part to the lower sample size for comparisons involving the mean number of days a given procedure is performed per month (because these comparisons omit those who do not perform the procedure at all), none of the differences between R.R.A.s and R.P.A.s in frequency of performance reached statistical significance at even the .05 level.

## Detailed Results

### All Respondents

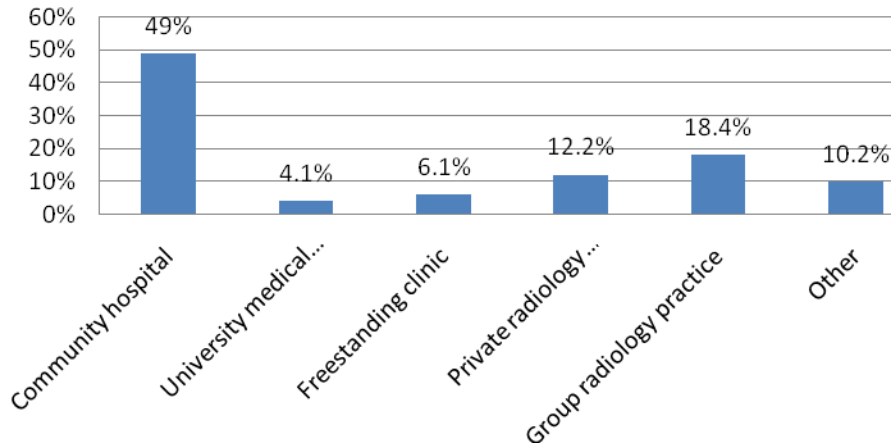
Did you receive an invitation (postal or e-mail) to participate in this survey of radiologist extender salaries and roles?			
Response	Frequency	Percent	Valid Percent
No.	1	2.0	2.0
Yes, via e-mail.	40	81.6	81.6
Yes, via USPS (i.e., in the mail).	5	10.2	10.2
Yes, on the ASRT Web site.	2	4.1	4.1
Other.	1	2.0	2.0
Total	49	100.0	100.0

### Did you receive an invitation?



1. Type of facility			
	Frequency	Percent	Valid Percent
Community hospital	24	49.0	49.0
University medical center	2	4.1	4.1
Freestanding clinic	3	6.1	6.1
Private radiology practice	6	12.2	12.2
Group radiology practice	9	18.4	18.4
Other	5	10.2	10.2
Total	49	100.0	100.0

### Type of facility

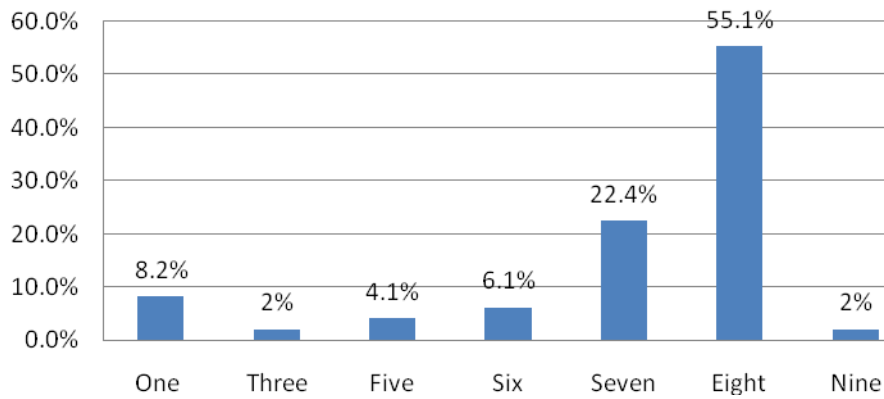


1. Other type of facility (specified)			
	Verbatim Response	Frequency	Percent
Other	Hospital based Outpatient Imaging Center	1	20.0
	I wasn't sure how to answer this question. I work at a community hospital but I am employed by the radiology group, which is a private radiology group.	1	20.0
	I work for a Private radiology practice that extends their services to multiple hospitals.	1	20.0
	[Name] University	1	20.0
	work for private doctor office	1	20.0
	Total	5	100.0

2. Number of services provided in your facility					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	8.2	8.2	8.2
	3	1	2.0	2.0	10.2
	5	2	4.1	4.1	14.3
	6	3	6.1	6.1	20.4
	7	11	22.4	22.4	42.9
	8	27	55.1	55.1	98.0
	9	1	2.0	2.0	100.0
	Total	49	100.0	100.0	

A majority of respondents work at facilities that provide 8 or more of the 8 named services plus "other." Examining the specific services offered (see next table) reveals that 26 of those 28 facilities provide all of the named services.

## Number of services provided in your facility



Combination	Frequency	Valid Percent
9 ("Other" only)	1	2.0
23000080	1	2.0
10000000	3	6.1
123050080	1	2.0
123056780	1	2.0
123400009	1	2.0
123400089	1	2.0
123450080	2	4.1
123450089	1	2.0
123450780	5	10.2
123450789	2	4.1
123456080	4	8.2
123456780	25	51.0
123456789	1	2.0
Total	49	100.0

Note: 1=Radiography; 2 = CT; 3 = MR; 4 = Mammography; 5 = Nuclear Medicine; 6 = Cardiovascular/Interventional ; 7 = PET; 8 = Sonography; 9 = Other.

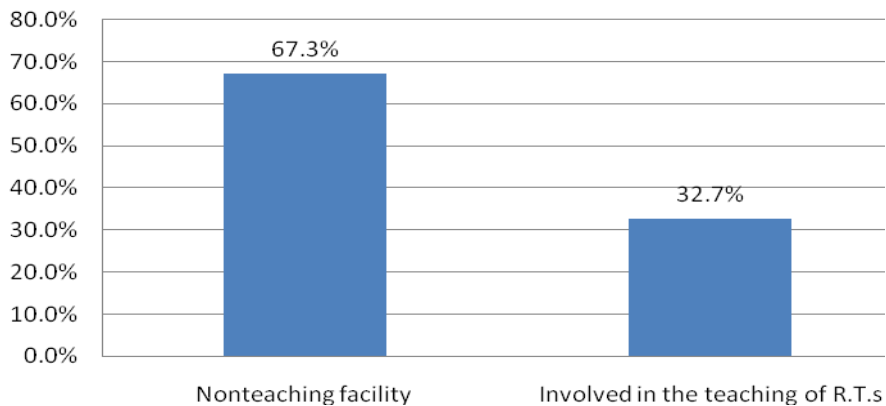
Three of the four single-service facilities provide only radiography, while the fourth provides "General Radiography."

<b>“Other” services provided (verbatim responses)</b>	
Service pattern	Description of “Other” service provided
000000001	General Radiography
123400009	us, fluoro procedures (myelograms, arthrograms)
123400089	DEXA Bone Density
123450080	interventional/diagnostic special procedures. Thora's, para's. Tunneled catheters for dialysis.
123450089	Interventional RadiologyNeurointerventional Radiology
123450789	biopsies, paras, thoras, etc
123450789	Interventional Suite
123456789	DEXA

None of the radiology extenders who responded to this survey appear to be involved in practices specializing in advanced modalities.

<b>3. Teaching status of your facility</b>		
	Frequency	Percent
Nonteaching facility	33	67.3
Involved in the teaching of R.T.s	16	32.7
Total	49	100.0

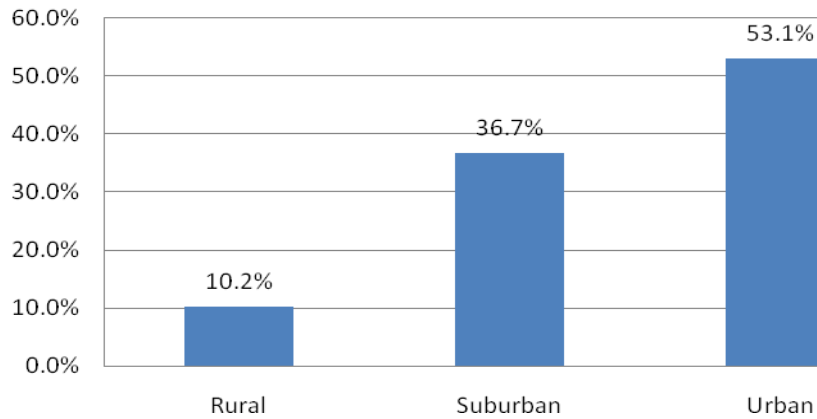
**Teaching status of your facility**



<b>4. Location of facility</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	5	10.2	10.2	10.2
	Suburban	18	36.7	36.7	46.9
	Urban	26	53.1	53.1	100.0
	Total	49	100.0	100.0	



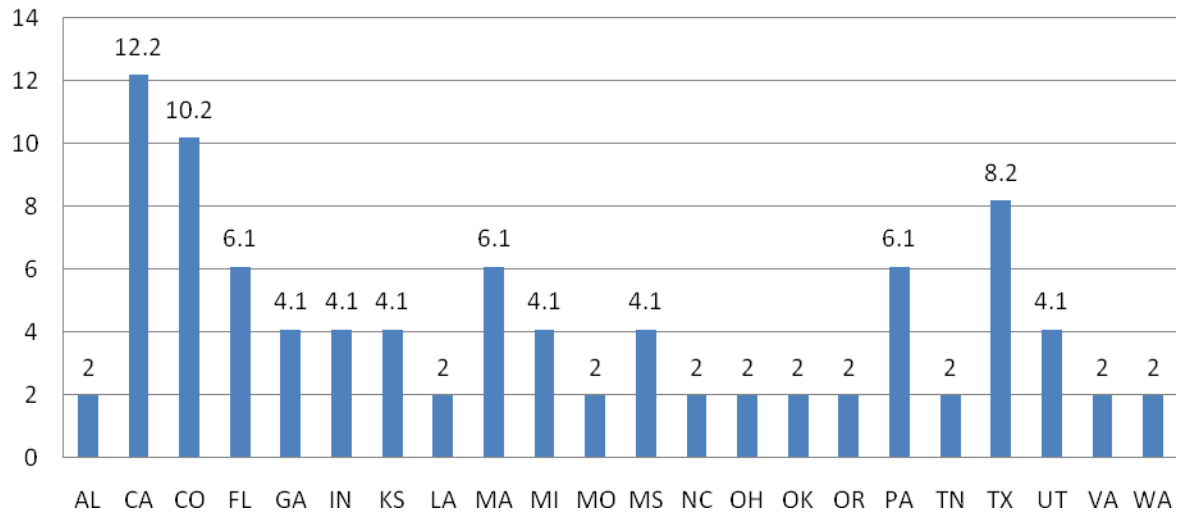
### Location of facility



State				
	Frequency	Percent	Valid Percent	Cumulative Percent
Blank	3	6.1	6.1	6.1
AL	1	2.0	2.0	8.2
CA	6	12.2	12.2	20.4
CO	5	10.2	10.2	30.6
FL	3	6.1	6.1	36.7
GA	2	4.1	4.1	40.8
IN	2	4.1	4.1	44.9
KS	2	4.1	4.1	49.0
LA	1	2.0	2.0	51.0
MA	3	6.1	6.1	57.1
MI	2	4.1	4.1	61.2
MO	1	2.0	2.0	63.3
MS	2	4.1	4.1	67.3
NC	1	2.0	2.0	69.4
OH	1	2.0	2.0	71.4
OK	1	2.0	2.0	73.5
OR	1	2.0	2.0	75.5
PA	3	6.1	6.1	81.6
TN	1	2.0	2.0	83.7
TX	4	8.2	8.2	91.8
UT	2	4.1	4.1	95.9
VA	1	2.0	2.0	98.0
WA	1	2.0	2.0	100.0
Total	49	100.0	100.0	

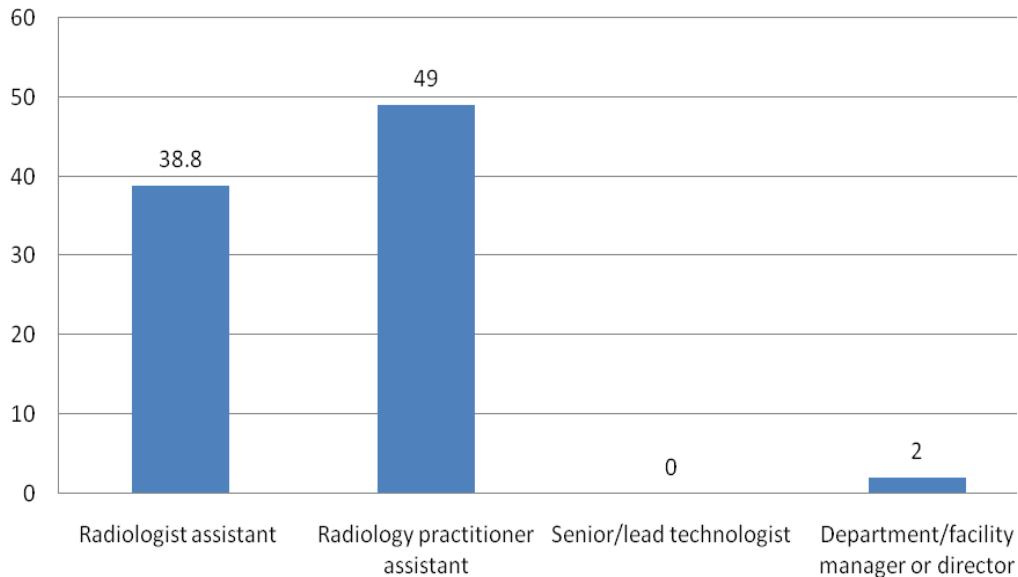
Respondents are plying their profession in at least 22 states.

### State



What is your primary title or position?		
	Frequency	Valid Percent
Radiologist assistant	19	38.8
Radiology practitioner assistant	24	49.0
Senior/lead technologist	0	0.0
Department/facility manager or director	1	2.0
Other	5	10.2
Total	49	100.0

### What is your primary title or position?

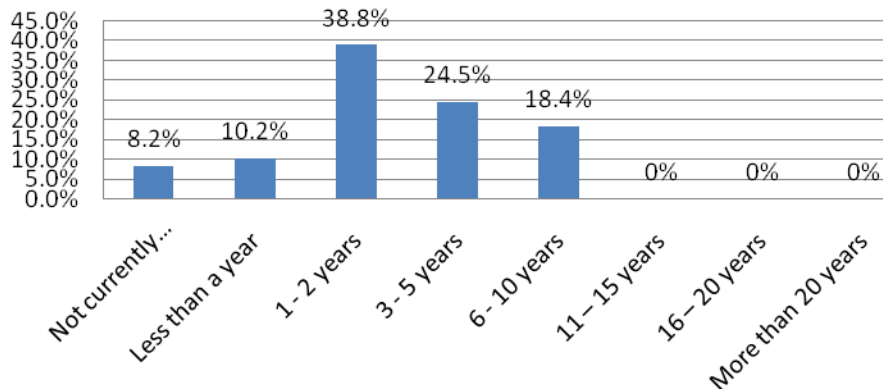


"Other" Primary Title or Position, Specified (Verbatim Responses)	
Other	Chief Technology Officer
	Faculty
	I am currently working as a staff Special Procedures technologist but I am trying to find a job as a RRA.
	Registry MRI Technologist
	sonographer

6. For how many years have you practiced as an RA or R.P.A.?				
Response	Frequency	Percent	Valid Percent	Cumulative Percent
Not currently practicing as an RA/R.P.A.	4	8.2	8.2	8.2
Less than a year	5	10.2	10.2	18.4
1 - 2 years	19	38.8	38.8	57.1
3 - 5 years	12	24.5	24.5	81.6
6 - 10 years	9	18.4	18.4	100.0
11 - 15 years	0	0.0	0.0	100.0
16 - 20 years	0	0.0	0.0	100.0
More than 20 years	0	0.0	0.0	100.0
Total	49	100.0	100.0	

Including respondents who checked "Not currently practicing" as having 0 years of practice, results in a mean years of practice total that equals 3.08 years (median = 2.47 years). Eliminating these 4 respondents from the calculation produces a mean years of practice of 3.36 and a median of 2.79.

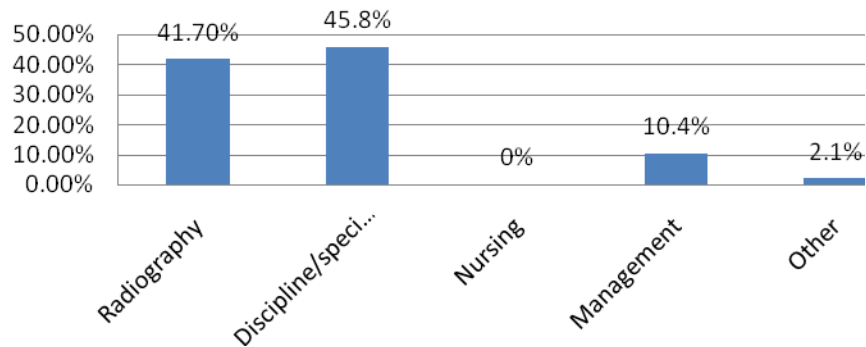
### For how many years have you practiced as an RA or R.P.A.?



7. What was your primary sphere of employment before beginning practice as an RA or R.P.A.?		Frequency	Percent	Valid Percent
Valid	Radiography	20	40.8	41.7
	A discipline/specialty within radiologic technology other than radiography	22	44.9	45.8
	Nursing	0	0.0	0.0
	Management	5	10.2	10.4
	Other	1	2.0	2.1
	Total	48	98.0	100.0
Missing	System	1	2.0	
	Total	49	100.0	

Please specify your primary sphere of employment before beginning practice as an RA or R.P.A., if other than [those listed above].

### What was your primary sphere of employment before beginning practice as an RA or R.P.A.?

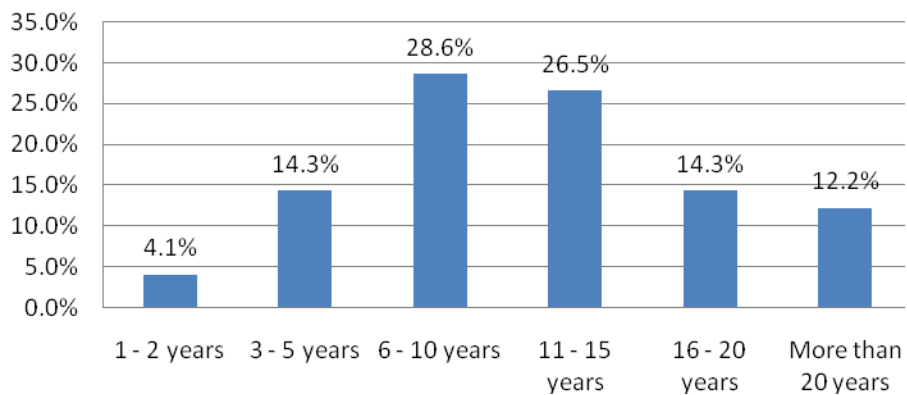


<b>“Other” primary sphere of employment specified</b>	
	Lead technologist interventional radiography
Missing	None

<b>8. For how many years did you practice in the sphere of employment specified in your answer to question 7?</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent
1 - 2 years	2	4.1	4.1	4.1
3 - 5 years	7	14.3	14.3	18.4
6 - 10 years	14	28.6	28.6	46.9
11 - 15 years	13	26.5	26.5	73.5
16 - 20 years	7	14.3	14.3	87.8
More than 20 years	6	12.2	12.2	100.0
Total	49	100.0	100.0	

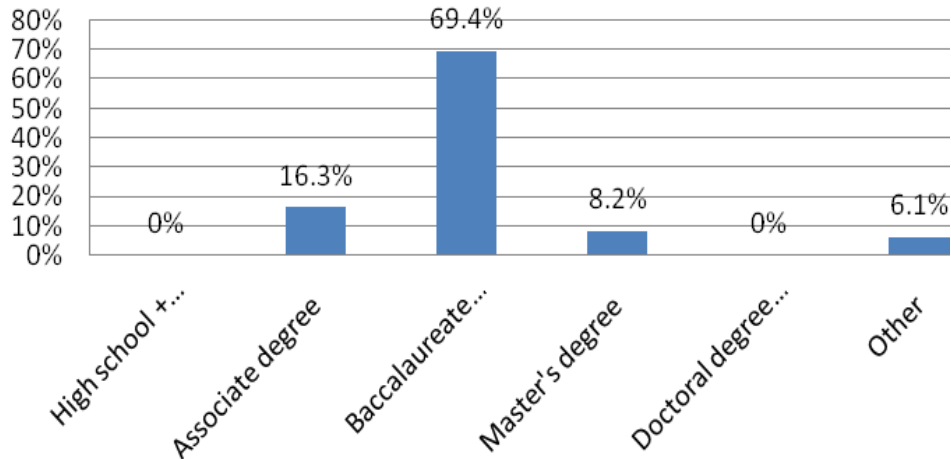
Mean years of practice in prior sphere of employment was 11.51 years; median was 11.15 years.

### For how many years did you practice in the sphere of employment



<b>9. What is the highest level of education you have completed?</b>				
Highest level completed	Frequency	Percent	Valid Percent	Cumulative Percent
High school + certificate	0	0.0	0.0	0.0
Associate degree	8	16.3	16.3	16.3
Baccalaureate degree	34	69.4	69.4	85.7
Master's degree	4	8.2	8.2	93.9
Doctoral degree (including medical)	0	0.0	0.0	93.9
Other	3	6.1	6.1	100.0
Total	49	100.0	100.0	

## What is the highest level of education you have completed?



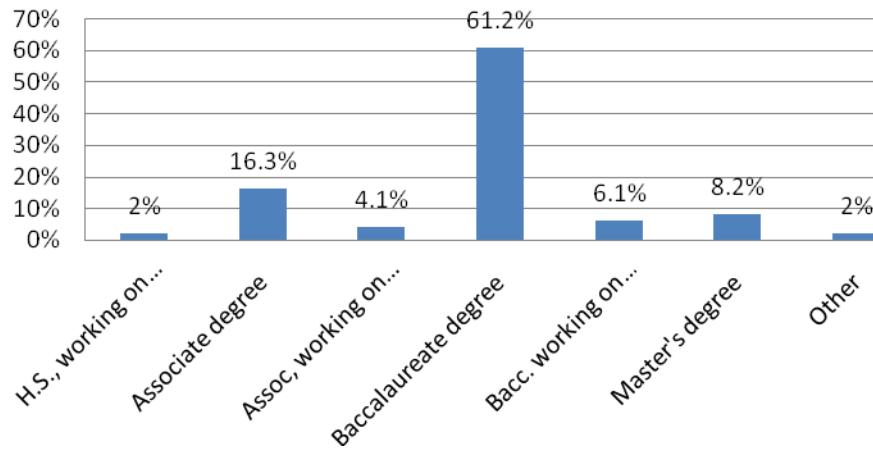
**Please specify your other highest level of education completed: (verbatim responses)**

Other	Associate degree with certificate as rpa
	Working to complete Baccalaureate degree

These "other" responses were used to generate an expanded distribution of highest level of education:

9. Highest level of education, refined				
	Frequency	Percent	Valid Percent	Cumulative Percent
H.S., working on baccalaureate	1	2.0	2.0	2.0
Associate degree	8	16.3	16.3	18.4
Assoc, working on baccalaureate	2	4.1	4.1	22.4
Baccalaureate degree	30	61.2	61.2	83.7
Bacc. working on Master's	3	6.1	6.1	89.8
Master's degree	4	8.2	8.2	98.0
Other	1	2.0	2.0	100.0
Total	49	100.0	100.0	

### Highest level of education, refined



**10. Please describe the procedures or functions you perform most frequently that are NOT performed by "regular" radiographers or that would require a higher level of supervision if performed by a radiographer not certified as a radiologist extender. Indicate the frequency with which you perform that procedure or function, and the level of supervision under which it is performed.**

The functions reported by the survey respondents were organized according to the Clinical Activities section of the January 2005 ARRT Registered Radiologist Assistant Role Delineation document. All functions were grouped into 3 sections for comparative purposes: fluoroscopic examinations, procedures requiring contrast media administration and needle or catheter placement and additional clinical procedures.

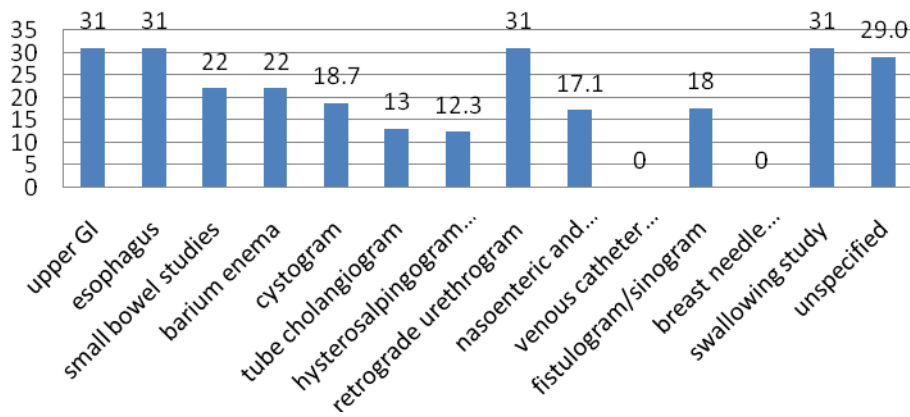
Fluoroscopic Examinations							
Frequencies with which Procedures/Functions are Performed							
	Statistic <sup>a</sup>	Less than once a month	Monthly or more often	Weekly or more often	Daily or more often	Total	Mean times per month
a. Upper GI	Count	0	0	0	9	9	31.00
	%	.0%	.0%	.0%	100.0%	100.0%	
b. Esophagus	Count	0	0	0	5	5	31.00
	%	.0%	.0%	.0%	100.0%	100.0%	
c. Small bowel studies	Count	0	0	1	2	3	22.00
	%	.0%	.0%	33.3%	66.7%	100.0%	
d. Barium enema	Count	0	0	3	6	9	22.00
	%	.0%	.0%	33.3%	66.7%	100.0%	
e. Cystogram	Count	0	0	5	6	11	18.72
	%	.0%	.0%	45.5%	54.5%	100.0%	
f. T-tube cholangiogram	Count	0	0	2	1	3	13.00
	%	.0%	.0%	66.7%	33.3%	100.0%	
g. Hysterosalpingogram (imaging only)	Count	0	2	4	3	9	12.33
	%	.0%	22.2%	44.4%	33.3%		
h. Retrograde urethrogram	Count	0	0	0	2	2	31.00
	%	.0%	.0%	.0%	100.0%	100.0%	
i. Nasoenteric and oroenteric feeding tube placement	Count	0	1	3	4	8	17.12
	%	.0%	12.5%	37.5%	50.0%		

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j. Venous catheter placement for dialysis	Count	0	0	0	0	0	0.00
	%	.0%	.0%	.0%	.0%	.0%	
k. Fistulogram/sinogram	Count	0	0	2	2	4	17.50
	%	.0%	.0%	50.0%	50.0%	100.0%	
l. Breast needle localization	Count	0	0	0	0	0	0.00
	%	.0%	.0%	.0%	.0%	.0%	
m. Swallowing study	Count	0	0	0	3	3	31.00
	%	.0%	.0%	.0%	100.0%	100.0%	
n. Unspecified	Count	0	1	1	26	28	28.96
	%	.0%	3.6%	3.6%	92.9%	100.0%	
<b>Total</b>	<b>Count</b>	<b>0</b>	<b>4</b>	<b>21</b>	<b>66</b>	<b>91</b>	<b>23.45</b>

<sup>a</sup>Counts and percentages are valid responses and do not include blank responses.

### Fluoroscopic Examinations Mean Times Performed per Month



Contrast Media Administration and Needle or Catheter Placement Examinations Frequencies with which Procedures/Functions are Performed							
	Statistic <sup>a</sup>	Less than once a month	Monthly or more often	Weekly or more often	Daily or more often	Total	Mean times per month
a. Lumbar puncture under fluoroscopic guidance	Count	0	2	5	5	12	14.7
	%	.0%	16.7%	41.7%	41.7%	100.0%	
b. Lumbar myelogram	Count	0	4	12	7	23	11.70
	%	.0%	17.4%	52.2%	30.4%	100.0%	
c. Thoracic or cervical myelogram	Count	0	0	0	0	0	0.0
	%	.0%	.0%	.0%	.0%	0.0%	
d. Joint injection and aspiration	Count	0	2	2	5	9	18.33
	%	.0%	22.2%	22.2%	55.6%	100.0%	
e. Arthrogram (conventional, CT, and MR)	Count	0	4	6	12	22	18.18
	%	.0%	18.2%	27.3%	54.5%	100.0%	
f. PICC placement	Count	2	1	7	12	22	18.23
	%	9.1%	4.5%	31.8%	54.5%	100.0%	
g. Nontunneled venous central line placement	Count	0	0	1	1	2	17.50
	%	.0%	.0%	50.0%	50.0%	100.0%	
h. Paracentesis with appropriate image guidance	Count	0	3	13	12	28	13.86
	%	.0%	10.7%	46.4%	42.9%	100.0%	

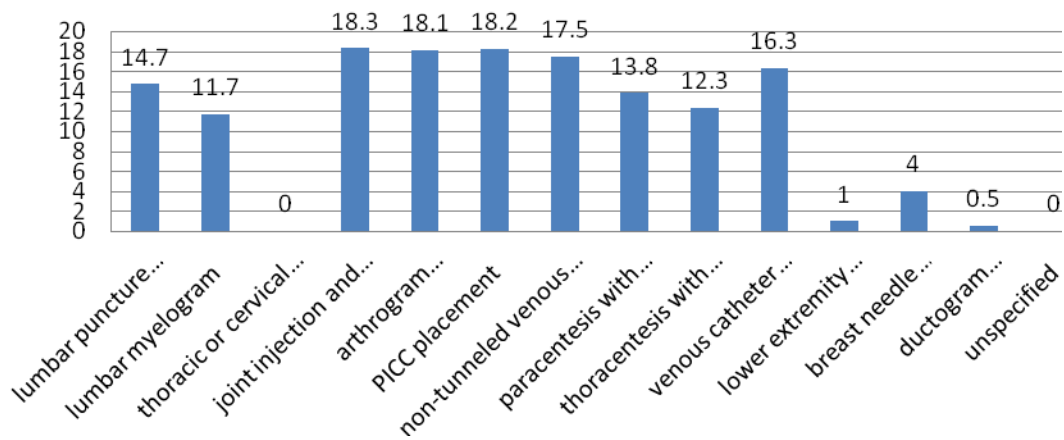


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i. Thoracentesis with appropriate image guidance	Count	1	3	9	10	23	12.33
	%	4.3%	13.0%	39.1%	43.5%	100.0%	
j. Venous catheter placement for dialysis	Count	0	4	1	5	10	16.30
	%	.0%	40.0%	10.0%	50.0%	100.0%	
k. Lower extremity venography	Count	0	2	0	0	2	1.00
	%	.0%	100.0%	.0%	.0%	100.0%	
l. Breast needle localization	Count	0	0	3	0	3	4.00
	%	.0%	.0%	100.0%	.0%	100.0%	
m. Ductogram (galactogram)	Count	1	0	0	0	1	.50
	%	100.0%	.0%	.0%	.0%	100.0%	
n. Unspecified	Count	0	0	0	0	0	.000
	%	0	0	0	0	0.0%	
<b>Total</b>	<b>Count</b>	<b>4</b>	<b>24</b>	<b>54</b>	<b>60</b>	<b>142</b>	<b>14.79</b>

<sup>a</sup>Counts and percentages are valid responses and do not include blank responses.

### Contrast Media Administration and Needle or catheter Placement Examinations Mean times Performed per month



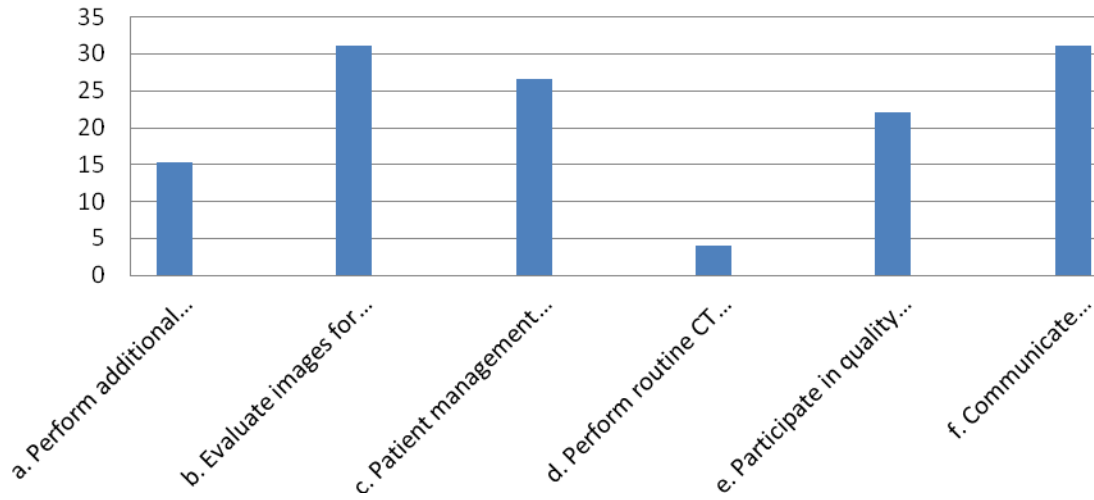
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Additional Examinations Frequencies with which Procedures/Functions are Performed							
	Statistic <sup>b</sup>	Less than once a month	Monthly or more often	Weekly or more often	Daily or more often	Total	Mean times per month
a. Perform additional procedures the radiologist deems appropriate <sup>a</sup>	Count	3	4	12	15	34	15.20
	%	8.8%	11.8%	35.3%	44.1%	100.0%	
b. Evaluate images for completeness and diagnostic quality, and recommend additional images as required	Count	0	0	0	3	3	31.00
	%	.0%	.0%	.0%	100.0%	100.0%	
c. Patient management activities (obtain medical history, obtain informed consent, perform physical examination)	Count	0	0	1	5	6	26.50
	%	.0%	.0%	16.7%	83.3%	100.0%	
d. Perform routine CT post-processing	Count	0	0	2	0	2	4.00
	%	.0%	.0%	100.0%	.0%	100.0%	
e. Participate in quality improvement activities within radiology practice	Count	0	0	1	2	3	22.00
	%	.0%	.0%	33.3%	66.7%	100.0%	
f. Communicate radiologist's report to referring physician consistent with ACR Communication Guideline	Count	0	0	0	1	1	31.00
	%	.0%	.0%	.0%	100.0%	100.0%	
<b>Total</b>	<b>Count</b>	<b>3</b>	<b>4</b>	<b>16</b>	<b>26</b>	<b>49</b>	<b>17.84</b>

<sup>a</sup>Respondents reported participation in additional procedures as an assistant to a radiologist or as the performer of the procedure with various levels of supervision. The additional procedures reported were interventional procedures (n=18), biopsies (n=14), CT studies (n=6), tube/line maintenance (n=3), sentinel node injections (n=1), and Ultrasound guided FNA (n=1).

<sup>b</sup>Counts and percentages are valid responses and do not include blank responses.

## Additional Examinations Mean Times Performed per Month

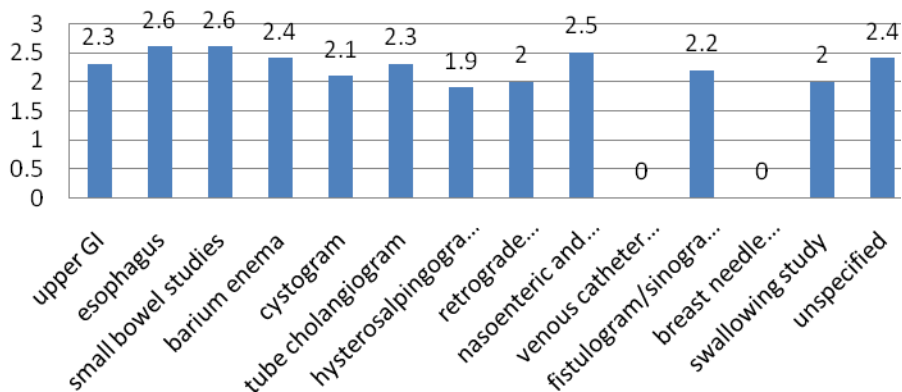


Fluoroscopic Examinations Levels of Supervision under which Procedures/Functions are Performed						
	Statistic <sup>a</sup>	Personal	Direct	General	Total	Mean <sup>b</sup>
a. Upper GI	Count	0	5	4	9	2.33
	%	.0%	55.6%	44.4%	100.0%	
b. Esophagus	Count	0	2	3	5	2.60
	%	.0%	40.0%	60.0%	100.0%	
c. Small bowel studies	Count	0	1	2	3	2.67
	%	.0%	33.3%	66.7%	100.0%	
d. Barium enema	Count	0	5	4	9	2.44
	%	.0%	55.6%	44.4%	100.0%	
e. Cystogram	Count	0	9	2	11	2.18
	%	.0%	81.8%	18.2%	100.0%	
f. T-tube cholangiogram	Count	0	2	1	3	2.33
	%	.0%	66.7%	33.3%	100.0%	
g. Hysterosalpingogram (imaging only)	Count	3	5	2	10	1.90
	%	30.0%	50.0%	20.0%	100.0%	
h. Retrograde urethrogram	Count	0	2	0	2	2.00
	%	.0%	100.0%	.0%	100.0%	
i. Nasoenteric and oroenteric feeding tube placement	Count	0	4	4	8	2.50
	%	.0%	50.0%	50.0%	100.0%	
j. Venous catheter placement for dialysis	Count	0	0	0	0	0.0
	%	.0%	.0%	.0%	.0%	
k. Fistulogram/sinogram	Count	1	1	2	4	2.25
	%	25.0%	25.0%	50.0%	100.0%	
l. Breast needle localization	Count	0	0	0	0	0.0
	%	.0%	.0%	.0%	.0%	
m. Swallowing study	Count	0	3	0	3	2.00
	%	.0%	100.0%	.0%	100.0%	
n. Unspecified	Count	0	17	12	29	2.41
	%	.0%	58.6%	41.4%	100.0%	
<b>Total</b>	<b>Count</b>	<b>4</b>	<b>55</b>	<b>34</b>	<b>93</b>	<b>2.32</b>

<sup>a</sup>Counts and percentages are valid responses and do not include blank responses.

<sup>b</sup>The lower the score, the greater amount of supervision required, on average.

### Fluoroscopic Examinations Mean Level of Supervision

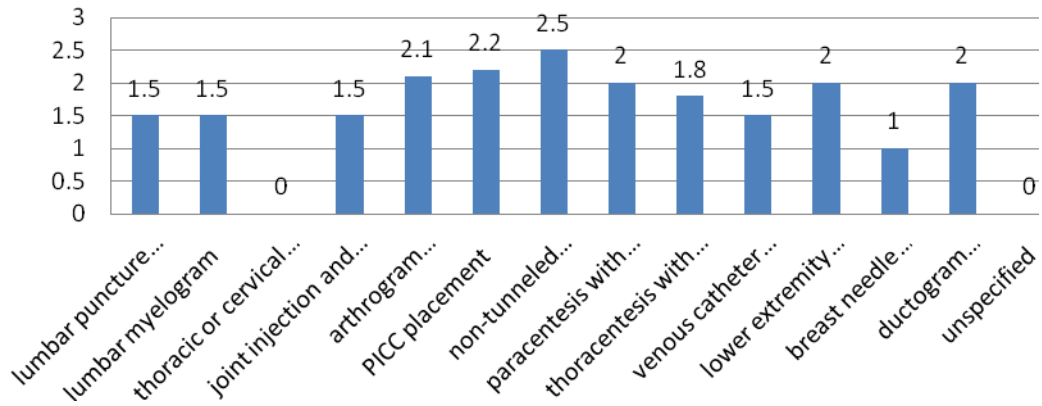


Contrast Media Administration and Needle or catheter Placement Examinations Levels of Supervision under which Procedures/Functions are Performed						
	Statistic <sup>a</sup>	Personal= 1	Direct=2	General=3	Total	Mean <sup>b</sup>
a. Lumbar puncture under fluoroscopic guidance	Count	7	4	1	12	1.50
	%	58.3%	33.3%	8.3%	100.0%	
b. Lumbar myelogram	Count	11	11	1	23	1.57
	%	47.8%	47.8%	4.3%	100.0%	
c. Thoracic or cervical myelogram	Count	0	0	0	0	0.0
	%	.0%	.0%	.0%	.0%	
d. Joint injection and aspiration	Count	4	5	0	9	1.56
	%	44.4%	55.6%	.0%	100.0%	
e. Arthrogram (conventional, CT, and MR)	Count	3	13	6	22	2.14
	%	13.6%	59.1%	27.3%	100.0%	
f. PICC placement	Count	2	13	8	23	2.26
	%	8.7%	56.5%	34.8%	100.0%	
g. Nontunneled venous central line placement	Count	0	1	1	2	2.50
	%	.0%	50.0%	50.0%	100.0%	
h. Paracentesis with appropriate image guidance	Count	4	23	2	29	2.00
	%	13.8%	79.3%	6.9%	100.0%	
i. Thoracentesis with appropriate image guidance	Count	4	19	1	24	1.88
	%	16.7%	79.2%	4.2%	100.0%	
j. Venous catheter placement for dialysis	Count	5	6	0	11	1.55
	%	45.5%	54.5%	.0%	100.0%	
k. Lower extremity venography	Count	0	3	0	3	2.00
	%	.0%	100.0%	.0%	100.0%	
l. Breast needle localization	Count	3	0	0	3	1.00
	%	100.0%	.0%	.0%	100.0%	
m. Ductogram (galactogram)	Count	0	1	0	1	2.00
	%	.0%	100.0%	.0%	100.0%	
n. Unspecified	Count	0	0	0	0	0.0
	%	.0%	.0%	.0%	.0%	
<b>Total</b>	<b>Count</b>	<b>40</b>	<b>87</b>	<b>20</b>	<b>147</b>	<b>1.86</b>

<sup>a</sup>Counts and percentages are valid responses and do not include blank responses.

<sup>b</sup>The lower the score, the greater amount of supervision required, on average.

## Contrast Media Administration and Needle or catheter Placement Examinations Mean Level of Supervision

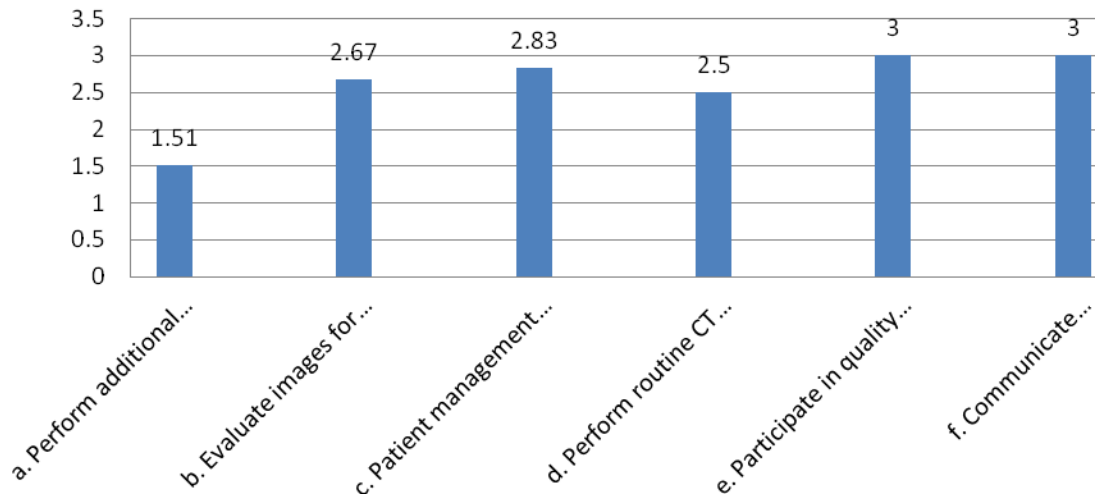


Additional Procedures						
Levels of Supervision under which Procedures/Functions are Performed						
	Statistic <sup>a</sup>	Personal=1	Direct=2	General=3	Total	Mean <sup>b</sup>
a. Perform additional procedures the radiologist deems appropriate	Count	18	19	0	37	1.51
	%	48.6%	51.4%	.0%	100.0%	
b. Evaluate images for completeness and diagnostic quality, and recommend additional images as required	Count	0	1	2	3	2.67
	%	.0%	33.3%	66.7%	100.0%	
c. Patient management activities (obtain medical history, obtain informed consent, perform physical examination)	Count	0	1	5	6	2.83
	%	.0%	16.7%	83.3%	100.0%	
d. Perform routine CT post-processing	Count	0	1	1	2	2.50
	%	.0%	50.0%	50.0%	100.0%	
e. Participate in quality improvement activities within radiology practice	Count	0	0	4	4	3.00
	%	.0%	.0%	100.0%	100.0%	
f. Communicate radiologist's report to referring physician consistent with ACR Communication Guideline	Count	0	0	1	1	3.00
	%	.0%	.0%	100.0%	100.0%	
<b>Total</b>	<b>Count</b>	<b>40</b>	<b>18</b>	<b>22</b>	<b>13</b>	<b>53</b>

<sup>a</sup>Counts and percentages are valid responses and do not include blank responses.

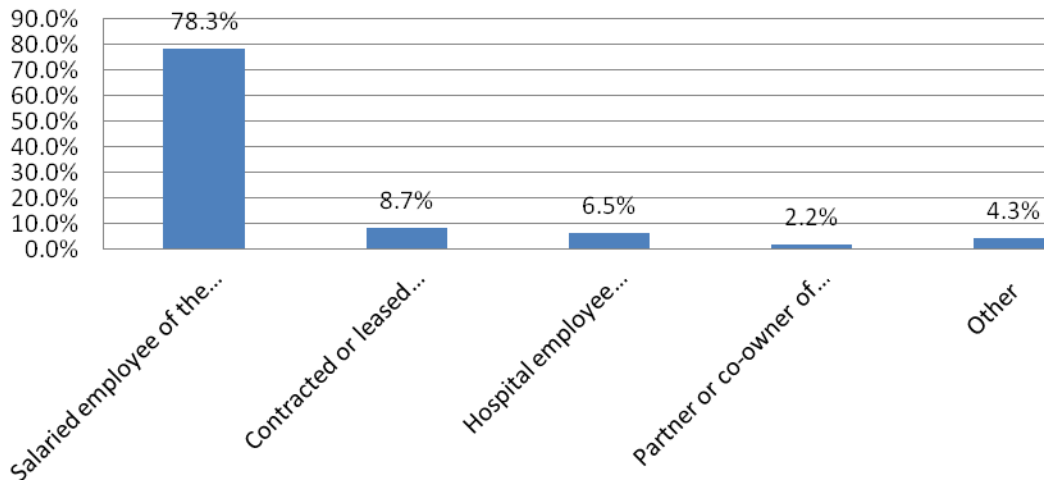
<sup>b</sup>The lower the score, the greater amount of supervision required on average.

## Additional Examinations Mean Level of Supervision



11. What best describes your type of compensation?					
Response		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Salaried employee of the practice	36	73.5	78.3	78.3
	Contracted or leased employee of the practice	4	8.2	8.7	87.0
	Hospital employee supervised by a nonhospital-employed radiologist	3	6.1	6.5	93.5
	Partner or co-owner of the radiology practice	1	2.0	2.2	95.7
	Other	2	4.1	4.3	100.0
	Total	46	93.9	100.0	
Missing	System	3	6.1		
Total		49	100.0		

## What best describes your type of compensation?



"Other" types of compensation, specified	
Other	All employees work for the clinic
	Hourly employee of the hospital
Missing	None

### 12 . What is your annual base salary?

One respondent reported an annual base salary of \$46; another, \$165. It seems very likely that the \$165 response was intended to be \$165,000. The \$46 response, on the other hand, might have been intended to be \$46,000 (which is considerably below the next lowest reported base salary of \$72,000) or it might have been intended to be that respondent's hourly wage, which translates into a base annual salary of \$95,680, close to the median reported salary. Given this uncertainty, the \$46 response was omitted from all analyses of base annual salary, leading to the following overall distribution:

12. Corrected salary figure				
		Frequency	Valid Percent	Cumulative Percent
Valid	\$70,200	1	2.3	2.3
	\$75,000	1	2.3	4.7
	\$80,000	2	4.7	9.3
	\$81,000	1	2.3	11.6
	\$82,500	1	2.3	14.0
	\$84,000	2	4.7	18.6
	\$85,000	6	14.0	32.6
	\$90,000	6	14.0	46.5
	\$93,000	1	2.3	48.8
	\$95,000	3	7.0	55.8



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	\$99,625	1	2.3	58.1
	\$100,000	7	16.3	74.4
	\$105,000	1	2.3	76.7
	\$109,000	1	2.3	79.1
	\$110,000	1	2.3	81.4
	\$111,000	1	2.3	83.7
	\$113,000	1	2.3	86.0
	\$117,000	1	2.3	88.4
	\$120,000	2	4.7	93.0
	\$125,000	1	2.3	95.3
	\$150,000	1	2.3	97.7
	\$165,000	1	2.3	100.0
	Total Valid	43	100.0	
Missing	System	6		
Total		49		

**13. Please estimate your total compensation for the past twelve months.**

There were 11 responses of less than \$35,000 (and therefore less than reported base annual salary). In each of these cases except two, it was assumed that the amount reported was the *additional* compensation beyond base salary. Corrected total compensation therefore was computed as the sum of the responses to questions 12 and 13. One exception was occasioned by the respondent who reported a base annual salary of \$165 and total annual compensation of \$175. In this case corrected total compensation was assumed to be \$175,000. Another exception was that the respondent who reported a base annual salary of \$46 and total compensation of \$0 was coded as “ambiguous” for reasons discussed earlier and was deleted from computation of summary statistics.

There were 2 additional cases in which reported total compensation was less than base annual compensation: \$84,000 base, \$81,000 total and \$120,000 base, \$110,000 total. It's uncertain whether these were mistyped or correctly recorded total compensation as \$165,000 and \$230,000. They were therefore coded as “ambiguous” and deleted from computation of summary statistics.

With these corrections, the distribution of (corrected) total annual compensation was as follows:

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<b>13. Total compensation past 12 months, corrected</b>				
	Total compensation	Frequency	Valid Percent	Cumulative Percent
	\$75,300.00	1	2.6	2.6
	\$79,000.00	1	2.6	5.1
	\$80,000.00	1	2.6	7.7
	\$81,000.00	1	2.6	10.3
	\$82,000.00	1	2.6	12.8
	\$83,500.00	1	2.6	15.4
	\$85,000.00	1	2.6	17.9
	\$86,500.00	1	2.6	20.5
	\$87,000.00	1	2.6	23.1
	\$90,000.00	2	5.1	28.2
	\$93,000.00	1	2.6	30.8
	\$94,000.00	1	2.6	33.3
	\$95,000.00	3	7.7	41.0
	\$96,000.00	1	2.6	43.6
	\$98,000.00	1	2.6	46.2
	\$100,000.00	2	5.1	51.3
	\$102,000.00	1	2.6	53.8
	\$103,000.00	1	2.6	56.4
	\$104,000.00	1	2.6	59.0
	\$105,000.00	4	10.3	69.2
	\$109,000.00	1	2.6	71.8
	\$111,000.00	1	2.6	74.4
	\$114,000.00	1	2.6	76.9
	\$116,000.00	1	2.6	79.5
	\$120,000.00	1	2.6	82.1
	\$124,000.00	1	2.6	84.6
	\$125,000.00	1	2.6	87.2
	\$132,000.00	1	2.6	89.7
	\$150,000.00	2	5.1	94.9
	\$155,000.00	1	2.6	97.4
	\$175,000.00	1	2.6	100.0
	Total	39	100.0	
Missing	Ambiguous	3		
	System	7		
	Total	10		
Total		49		

Summary statistics for (corrected) base annual salary and total annual compensation were as follows:

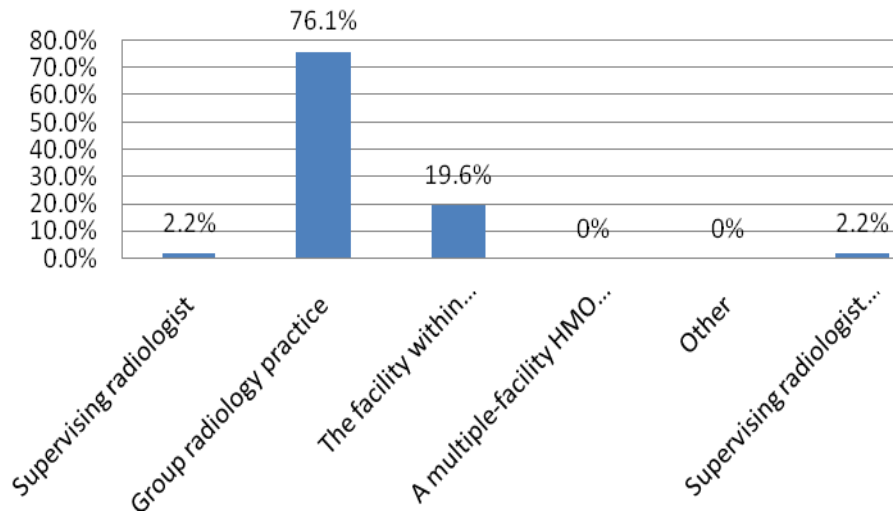
Radiologist Extender Survey 2008

<b>Summary Statistics</b>			
		12. Corrected salary figure	13. Total compensation past 12 months, corrected
N	Valid	43	39
	Missing	6	10
Mean		\$97,891	\$105,008
Median <sup>a</sup>		\$94,000	\$100,000
Std. deviation		\$18,459	\$24,621
Minimum		\$70,200	\$75,300
Maximum		\$165,000	\$175,000

<sup>a</sup> Calculated from grouped data.

14. Who pays your salary?			
		Frequency	Valid Percent
Valid	Supervising radiologist	1	2.2
	Group radiology practice	35	76.1
	The facility within which I practice	9	19.6
	A multiple-facility HMO or other health care system	0	0.0
	Other	0	0
	Supervising radiologist and other	1	2.2
	Total	46	100.0
Missing	Missing	3	
Total		49	

### Who pays your salary?



**15. Please add here any comments or explanations that you feel would help us better understand your answers to questions 1 - 14.**

Most answers were specific to particular questions and, in some cases quite lengthy. The comments fell into the following categories:

- A. Licensing – 4 responses
- B. Supervision Levels – 2 responses
- C. Billing / Reimbursement – 2 responses
- D. Education – 2 responses
- E. Certification – 1 response
- F. Practice – 1 response
- G. Salary and Compensation – 1 response
- H. Other (respondent specific) response – 1 response

## Differences Among Those Practicing as R.R.A.s, R.P.As and Neither

For these comparisons we employed 3 categories of primary title or position: R.R.A, R.P.A. and neither (not currently practicing as an R.R.A or as an R.P.A.). However, the last category included only 6 respondents, so it is uncertain whether the sample results (percentages, means, etc.) for this group are representative of the population of holders of R.R.A. and R.P.A. certificates who are not currently employed in those roles.

### Return Rate

The invitation (postal or e-mailed) to participate in this survey was sent to each of the 68 holders of the R.R.A. certificate and to each of the 297 ARRT registrants who also were registered with the CBRPA (and thus holders of the R.P.A. certificate); 29 of the invitees held both certificates. Completed questionnaires were received from 19 individuals whose primary job title is “radiologist assistant”, from 24 whose primary title is “radiology practitioner assistant” and from 6 not currently employed as either an R.R.A. or an R.P.A. Assuming that those listing radiologist assistant as their primary job title are R.R.A.-certified and that those listing R.P.A. as their primary title hold that certificate, the return rate for R.R.A.s was between  $19/68 = 28\%$  and  $25/68 = 37\%$  for R.R.A. invitees and between  $29/297 = 9.8\%$  and  $35/297 = 12\%$  for R.P.A. invitees. This difference in return rates is statistically significant at the .001 level.

1. Type of facility				
Primary title or position, 3 categories		Frequency	Percent	Valid Percent
R.R.A.	Community hospital	9	47.4	47.4
	University medical center	1	5.3	5.3
	Freestanding clinic	1	5.3	5.3
	Group radiology practice	6	31.6	31.6
	Other	2	10.5	10.5
	Total	19	100.0	100.0
R.P.A.	Community hospital	12	50.0	50.0
	University medical center	1	4.2	4.2
	Freestanding clinic	2	8.3	8.3
	Private radiology practice	5	20.8	20.8
	Group radiology practice	3	12.5	12.5
	Other	1	4.2	4.2
Total	24	100.0	100.0	
Not currently practicing as radiologist extender	Community hospital	3	50.0	50.0
	Private radiology practice	1	16.7	16.7
	Other	2	33.3	33.3
	Total	6	100.0	100.0

2. Number of services provided in your facility						
Primary title or position, 3 categories		Frequency	Percent	Valid Percent	Cumulative Percent	
R.R.A.	Valid	1	1	5.3	5.3	5.3
		6	1	5.3	5.3	10.5
		7	7	36.8	36.8	47.4
		8	10	52.6	52.6	100.0
		Total	19	100.0	100.0	
R.P.A.	Valid	1	2	8.3	8.3	8.3
		5	1	4.2	4.2	12.5
		6	1	4.2	4.2	16.7
		7	4	16.7	16.7	33.3
		8	15	62.5	62.5	95.8
		9	1	4.2	4.2	100.0
		Total	24	100.0	100.0	
Not currently practicing as radiologist extender	Valid	1	1	16.7	16.7	16.7
		3	1	16.7	16.7	33.3
		5	1	16.7	16.7	50.0
		6	1	16.7	16.7	66.7
		8	2	33.3	33.3	100.0
		Total	6	100.0	100.0	

2. Number of services provided in your facility					
	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
R.R.A.	19	7.16	1.608	6.38	7.93
R.P.A.	24	7.08	2.041	6.22	7.95
Not currently practicing as radiology extender	6	5.17	2.787	2.24	8.09
Total	49	6.88	2.048	6.29	7.47

The tendency for R.R.A.s and R.P.A.s who are not currently practicing as radiologist extenders to be practicing in facilities that offer fewer services was, despite the low N for that group, statistically significant at the .05 level ( $t_{46} = 2.257, P = .029$ ).

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<b>2. Combination of services provided</b>				
Primary title or position, 3 categories	Combination of Services	Frequency	Percent	Valid Percent
R.R.A.	100000000	1	5.3	5.3
	123056780	1	5.3	5.3
	123450080	1	5.3	5.3
	123450089	1	5.3	5.3
	123450780	2	10.5	10.5
	123456080	3	15.8	15.8
	123456780	10	52.6	52.6
	Total	19	100.0	100.0
R.P.A.	100000000	2	8.3	8.3
	123400009	1	4.2	4.2
	123450080	1	4.2	4.2
	123450780	3	12.5	12.5
	123450789	2	8.3	8.3
	123456080	1	4.2	4.2
	123456780	13	54.2	54.2
	123456789	1	4.2	4.2
Total	24	100.0	100.0	
Not currently practicing as radiology extender	9	1	16.7	16.7
	23000080	1	16.7	16.7
	123050080	1	16.7	16.7
	123400089	1	16.7	16.7
	123456780	2	33.3	33.3
	Total	6	100.0	100.0

Note: 1=Radiography; 2 = CT; 3 = MR; 4 = Mammography; 5 = Nuclear Medicine; 6 = Cardiovascular/Interventional; 7 = PET; 8 = Sonography; 9 = Other.

<b>3. Teaching status of your facility</b>					
Primary title or position, 3 categories	Facility involved in teaching R.T.s?	Frequency	Percent	Valid Percent	Cumulative Percent
R.R.A.	No	11	57.9	57.9	57.9
	Yes	8	42.1	42.1	100.0
	Total	19	100.0	100.0	
R.P.A.	No	17	70.8	70.8	70.8
	Yes	7	29.2	29.2	100.0
	Total	24	100.0	100.0	
Not currently practicing as radiologist extender	No	5	83.3	83.3	83.3
	Yes	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

The differences among the 3 subgroups were not statistically significant at even the .05 level.

4. Location of facility						
Primary title or position, 3 categories	Location		Frequency	Percent	Valid Percent	Cumulative Percent
	Valid					
R.R.A.		Rural	2	10.5	10.5	10.5
		Suburban	6	31.6	31.6	42.1
		Urban	11	57.9	57.9	100.0
		Total	19	100.0	100.0	
R.P.A.	Valid	Rural	3	12.5	12.5	12.5
		Suburban	10	41.7	41.7	54.2
		Urban	11	45.8	45.8	100.0
		Total	24	100.0	100.0	
Not currently practicing as radiologist extender	Valid	Suburban	2	33.3	33.3	33.3
		Urban	4	66.7	66.7	100.0
		Total	6	100.0	100.0	

None of the difference among the three subgroups was statistically significant.

State by Primary Title or Position				
State	Primary title or position			Total
	R.R.A	RPA	Not currently practicing as radiol extender	
Blank	2	1	0	3
AL	0	0	1	1
CA	1	2	3	6
CO	0	5	0	5
FL	2	0	1	3
GA	1	1	0	2
IN	2	0	0	2
KS	0	2	0	2
LA	0	1	0	1
MA	1	2	0	3
MI	1	1	0	2
MO	0	1	0	1
MS	2	0	0	2
NC	1	0	0	1
OH	0	1	0	1
OK	1	0	0	1
OR	0	1	0	1
PA	2	1	0	3
TN	0	1	0	1
TX	2	1	1	4
UT	0	2	0	2
VA	0	1	0	1
WA	1	0	0	1
Total	19	24	6	49

The difference between R.R.A.s and R.P.A.s with respect to the percentage of respondents who work in Colorado (0% vs. 20.8%) was statistically significant,  $\chi_1^2 = 4.479$ ,  $P < .05$ . This difference is also similar to but greater than the corresponding population difference: only 2 (2.9%) of the 68 holders of the R.R.A. certificate work in Colorado, compared with 22 (7.4%) of the 297 R.P.A. certificate holders.



6. For how many years have you practiced as an R.R.A. or R.P.A.?				
Primary title or position			Frequency	Valid Percent
R.R.A.	Valid	Less than a year	4	21.1
		1 - 2 years	8	42.1
		3 - 5 years	5	26.3
		6 - 10 years	2	10.5
		Total	19	100.0
R.P.A.	Valid	Less than a year	1	4.2
		1 - 2 years	10	41.7
		3 - 5 years	6	25.0
		6 - 10 years	7	29.2
		Total	24	100.0
Not currently practicing as radiologist extender	Valid	Not currently practicing as an RA/R.P.A.	4	66.7
		1 - 2 years	1	16.7
		3 - 5 years	1	16.7
		Total	6	100.0

6. For how many years have you practiced as an RA or R.P.A.?							
Primary Title or Position	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
R.R.A.	19	2.632	2.3024	1.522	3.741	.5	8.0
R.P.A.	24	3.979	2.8494	2.776	5.182	.5	8.0
Not currently practicing as radiologist extender	6	.917	1.6253	-.789	2.622	.0	4.0
Total	49	3.082	2.6874	2.310	3.854	.0	8.0

The difference in mean years between R.R.A.s and R.P.A.s practicing as a radiologist extender was *not* statistically significant ( $t_{46} = -1.732$ ,  $P = .090$ ).

Radiologist Extender Survey 2008

<b>7. What was your primary sphere of employment before beginning practice as an R.R.A. or R.P.A.?</b>				
Primary title or position			Frequency	Valid Percent
R.R.A.	Valid	Radiography	8	42.1
		A discipline/specialty within radiologic technology other than radiography	8	42.1
		Management	2	10.5
		Other	1	5.3
		Total	19	100.0
R.P.A.	Valid	Radiography	10	43.5
		A discipline/specialty within radiologic technology other than radiography	11	47.8
		Management	2	8.7
		Total valid	23	100.0
	Missing	System	1	
	Total	24		
Not currently practicing as radiologist extender	Valid	Radiography	2	33.3
		A discipline/specialty within radiologic technology other than radiography	3	50.0
		Management	1	16.7
		Total valid	6	100.0

<b>8. For how many years did you practice in the sphere of employment specified in your answer to question 7?</b>			
Primary title or position		Frequency	Valid Percent
R.R.A.	1 - 2 years	2	10.5
	3 - 5 years	2	10.5
	6 - 10 years	7	36.8
	11 - 15 years	3	15.8
	16 - 20 years	2	10.5
	More than 20 years	3	15.8
	Total	19	100.0
R.P.A.	3 - 5 years	5	20.8
	6 - 10 years	4	16.7
	11 - 15 years	8	33.3
	16 - 20 years	4	16.7
	More than 20 years	3	12.5
	Total	24	100.0
Not currently practicing as radiologist extender	6 - 10 years	3	50.0
	11 - 15 years	2	33.3
	16 - 20 years	1	16.7
	Total	6	100.0

8. For how many years did you practice in the sphere of employment specified in your answer to question 7?							
Primary title or position	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Minimum	Maximum
R.R.A.	19	10.789	6.4578	7.677	13.902	1.5	21
R.P.A.	24	12.125	5.8184	9.668	14.582	4.0	21
Not currently practicing as radiologist extender	6	11.333	4.0825	7.049	15.618	8.0	18
Total	49	11.510	5.8305	9.835	13.185	1.5	21

None of the differences among these 3 means were statistically significant.

9. Highest level of education, refined			
Primary title or position		Frequency	Valid Percent
R.R.A.	Baccalaureate degree	15	78.9
	Bacc, working on master's	1	5.3
	Master's degree	3	15.8
	Total	19	100.0
R.P.A.	H.S., working on bacc	1	4.2
	Associate degree	7	29.2
	Assoc, working on bacc	1	4.2
	Baccalaureate degree	12	50.0
	Bacc, working on master's	1	4.2
	Master's degree	1	4.2
	Other	1	4.2
	Total	24	100.0
Not currently practicing as radiologist extender	Associate degree	1	16.7
	Assoc, working on bacc	1	16.7
	Baccalaureate degree	3	50.0
	Bacc, working on master's	1	16.7
	Total	6	100.0

All of the respondents who are currently practicing as R.R.A.s have at least a bachelor's degree, compared with 62.5% of practicing R.P.A.s and 50% of respondents who are not currently practicing as radiologist extenders. The difference between R.R.A.s and R.P.A.s in this respect is statistically significant ( $\chi_1^2 = 9.011, P < .01$ ), as is the difference between R.R.A.s and those not currently practicing in either role ( $P = .009$  by Fisher's exact test).

## Differences in Procedures/Roles/Functions Among Those Practicing as R.R.A.s, RPAs and Neither

**Fluoroscopic Procedure Percent Mentioning and Mean Days per Month by Title<sup>a</sup>**

	Statistic <sup>b,c</sup>	R.R.A. (N = 18)	R.P.A. (N = 22)	Neither (N = 1)	Total (N=41)
a. Upper GI	Percent mentioning	33%	14%	0%	22%
	Mean days per month	31.00	31.00	-	31.00
b. Esophagus	Percent mentioning	17%	9%	0%	12%
	Mean days per month	31.00	31.00	-	31.00
c. Small bowel studies	Percent mentioning	17%	0%	0%	7%
	Mean days per month	22.00	-	-	22.00
d. Barium enema	Percent mentioning	33%	14%	0%	22%
	Mean days per month	17.50	31.00	-	22.00
e. Cystogram	Percent mentioning	33%	23%	0%	27%
	Mean days per month	22.00	14.80	-	18.73
f. T-tube cholangiogram	Percent mentioning	6%	9%	0%	7%
	Mean days per month	4.00	17.50	-	13.00
g. Hysterosalpingogram (imaging only)	Percent mentioning	11%	32%	1%	24%
	Mean days per month	17.50	12.00	4.00	12.33
h. Retrograde urethrogram	Percent mentioning	0%	9%	0%	5%
	Mean days per month	-	31.00	-	31.00
i. Nasoenteric and oroenteric feeding tube placement	Percent mentioning	22%	27%	0%	24%
	Mean days per month	31.00	12.50	-	17.13
j. Venous catheter placement for dialysis	Percent mentioning	0%	0%	0%	0%
	Mean days per month	-	-	-	-
k. Fistulogram/sinogram	Percent mentioning	0%	14%	0%	7%
	Mean days per month	-	13.00	-	13.00
l. Breast needle localization	Percent mentioning	0%	0%	0%	0%
	Mean days per month	-	-	-	-
m. Swallowing study	Percent mentioning	11%	0%	0%	5%
	Mean days per month	31.00	-	-	31.00
n. Unspecified	Percent mentioning	61%	77%	1%	71%
	Mean days per month	31.00	27.65	31.00	28.96

<sup>a</sup>Counts and percentages are valid responses and do not include blank responses.

<sup>b</sup> Percent mentioning: Among those who mentioned one or more of the 34 procedures (14 fluoro, 14 contras, 6 additional).

<sup>c</sup> Mean days per month: Among those who mentioned the procedure. Overall mean frequency = listed mean\*(percent mentioning).

<b>Percent Mentioning Contrast Procedures/Functions And Mean Frequency with which Performed<sup>a</sup></b>					
	Statistic <sup>b,c</sup>	R.R.A. (N = 18)	R.P.A. (N = 22)	Neither (N = 1)	Total (N=41)
a. Lumbar puncture under fluoroscopic guidance	Percent mentioning	50%	14%	0%	29%
	Mean days per month	12.33	22.00	0	14.75
b. Lumbar myelogram	Percent mentioning	50%	59%	100%	56%
	Mean days per month	9.33	14.15	1.00	11.70
c. Thoracic or cervical myelogram	Percent mentioning	0%	0%	0%	0%
	Mean days per month	-	-	-	-
d. Joint injection and aspiration	Percent mentioning	11%	32%	0%	22%
	Mean days per month	4.00	22.43	-	18.33
e. Arthrogram (conventional, CT, and MR)	Percent mentioning	65%	50%	0%	55%
	Mean days per month	14.50	22.60	-	18.18
f. PICC placement	Percent mentioning	72%	46%	0%	56%
	Mean days per month	19.50	16.70	-	18.23
g. Nontunneled venous central line placement	Percent mentioning	56%	45%	0%	49%
	Mean days per month	31.00	4.00	-	17.50
h. Paracentesis with appropriate image guidance	Percent mentioning	78%	64%	100%	71%
	Mean days per month	14.15	15.14	31.00	15.25
i. Thoracentesis with appropriate image guidance	Percent mentioning	61%	55%	100%	59%
	Mean days per month	14.50	14.42	31.00	15.17
j. Venous catheter placement for dialysis	Percent mentioning	44%	45%	0%	44%
	Mean days per month	14.29	31.00	-	16.38
k. Lower extremity venography	Percent mentioning	11%	45%	0%	29%
	Mean days per month	1.00	1.00	-	1.00
l. Breast needle localization	Percent mentioning	22%	0%	0%	10%
	Mean days per month	4.00	-	-	4.00
m. Ductogram (galactogram)	Percent mentioning	11%	0%	0%	5%
	Mean days per month	-	-	-	-
n. Unspecified	Percent mentioning	0%	0%	0%	0%
	Mean days per month	-	0	-	-

<sup>a</sup>Counts and percentages are valid responses and do not include blank responses.

<sup>b</sup>Percent mentioning: Among those who mentioned one or more of the 34 procedures (14 fluoro, 14 kontras, 6 additional).

<sup>c</sup>Mean days per month: Among those who mentioned the procedure. Overall mean frequency = listed mean\*(percent mentioning).  
Scale for days per month procedure/function performed: 0 = < once a month; 1 = monthly or more often; 4 = weekly or more often;  
31 = daily or more often.

Percent Mentioning Additional Procedures/Functions And Mean Frequency with which Performed <sup>a</sup>					
	Statistic <sup>b,c</sup>	R.R.A. (N = 18)	R.P.A. (N = 22)	Neither (N = 1)	Total (N=41)
a. Perform additional procedures the radiologist deems appropriate	Percent mentioning	56%	36%	100%	46%
	Mean days per month	14.38	13.71	4.00	13.45
b. Evaluate images for completeness and diagnostic quality, and recommend additional images as required	Percent mentioning	0%	14%	0%	7%
	Mean days per month	-	31.00	-	31.00
c. Patient management activities (obtain medical history, obtain informed consent, perform physical examination)	Percent mentioning	28%	14%	0%	20%
	Mean days per month	27.63	31.00	-	28.30
d. Perform routine CT post-processing	Percent mentioning	56%	45%	0%	5%
	Mean days per month	4.00	4.00	-	4.00
e. Participate in quality improvement activities within radiology practice	Percent mentioning	0%	14%	0%	7%
	Mean days per month	-	22.00	-	22.00
f. Communicate radiologist's report to referring physician consistent with ACR Communication Guideline	Percent mentioning	0%	45%	0%	2%
	Mean days per month	-	31.00	-	31.00

<sup>a</sup>Counts and percentages are valid responses and do not include blank responses.

<sup>b</sup>Percent mentioning: Among those who mentioned one or more of the 34 procedures (14 fluoro, 14 kontras, 6 additional).

<sup>c</sup>Mean days per month: Among those who mentioned the procedure. Overall mean frequency = listed mean\*(percent mentioning).

No statistically significant comparisons could be made between the 1 respondent in the "neither group" and the other 2 groups. The R.R.A. and R.P.A. groups differed significantly in the percent who indicated that they performed a given procedure or function with respect to only 3 of the 34 procedures. In particular, 9 (50%) of the 18 R.R.A.s who mentioned any procedures or functions indicated that they perform small bowel studies, as compared to 3 (13.6%) of the 22 R.P.A.s ( $\chi_1^2 = 6.234$ ,  $P = .0125$ ). Further, 8 (44.4%) of the R.R.A.s but only 1 (4.5%) of the R.P.A.s perform venous catheter placement for dialysis ( $\chi_1^2 = 9.038$ ,  $P = .003$ ). Finally, 4 (22.2%) of the R.R.A.s but none (0.0%) of the R.P.A.s indicate that they perform breast needle localization ( $P = .033$  by Fisher's exact test).

Due in part to the lower sample size available to compare mean number of days a given procedure is performed per month (because of omission of those who do not perform the procedure) none of the differences between R.R.A.s and R.P.A.s in frequency of performance reached statistical significance at even the .05 level.

11. What best describes your type of compensation? X Primary title or position, Cross-tabulation					
Type of Compensation	Statistic	Primary title or position			Total
		R.R.A.	R.P.A.	Not currently practicing as radiology extender	
Salaried employee of the practice	Count	14	20	2	36
	%	73.7%	83.3%	66.7%	78.3%
Contracted or leased employee of the practice	Count	2	2	0	4
	%	10.5%	8.3%	.0%	8.7%
Hospital employee supervised by a nonhospital-employed radiologist	Count	2	1	0	3
	%	10.5%	4.2%	.0%	6.5%
Partner or co-owner of the radiology practice	Count	1	0	0	1
	%	5.3%	.0%	.0%	2.2%
Other	Count	0	1	1	2
	%	.0%	4.2%	33.3%	4.3%
Total	Count	19	24	3	46
	%	100.0%	100.0%	100.0%	100.0%

12. What is your base annual salary X Primary title or position, Cross-tabulation							
Primary Title or Position	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
R.R.A.	18	\$102,972	\$19,391	\$93,229	\$112,615	\$75,000	\$165,000
R.P.A.	23	\$95,027	\$17,180	\$87,598	\$102,456	\$80,000	\$150,000
Not currently practicing as radio extender	2	\$85,100	\$21,072	-\$104,222	\$274,422	\$70,200	\$100,000
Total	44	\$97,891	\$18,459	\$92,211	\$103,572	\$70,200	\$165,000

The differences among these three means were not statistically significant at even the .05 level.

13. Total compensation past 12 months X Primary title or position, Cross-tabulation							
Primary Title or Position	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
R.R.A.	18	\$111,544	\$26,496	\$98,368	\$124,720	\$75,300	\$175,000
R.P.A.	18	\$99,972	\$18,161	\$90,941	\$109,004	\$80,000	\$150,000
Not currently practicing as radiologist extender	3	\$96,000	\$14,731	\$59,406	\$132,594	\$79,000	\$105,000
Total	39	\$105,008	\$22,621	\$97,675	\$112,341	\$75,300	\$175,000

None of the differences among these three means reached statistical significance at even the .05 level.

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14. Who pays your salary? -- single variable X Primary title or position Cross-tabulation						
		Statistic	Primary title or position			Total
			R.R.A.	R.P.A.	Not currently practicing as radiology extender	
14. Who pays your salary?	Supervising radiologist	Count	1	0	0	1
		%	5.3%	.0%	.0%	2.2%
	Group radiology practice	Count	16	18	1	35
		%	84.2%	75.0%	33.3%	76.1%
	The facility within which I practice	Count	2	5	2	9
		%	10.5%	20.8%	66.7%	19.6%
	Supervising radiologist and other	Count	0	1	0	1
		%	.0%	4.2%	.0%	2.2%
Total		Count	19	24	3	46
		%	100.0%	100.0%	100.0%	100.0%

None of the differences among these three groups with respect to any of the percentages was statistically significant at the .05 level.



## Appendix A: Questionnaire and Invitation Note

[ASRT logo]

April 1, 2008

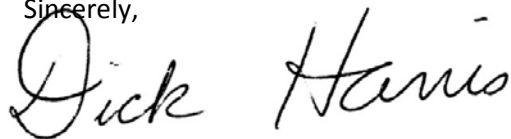
Dear Radiologist Assistant or Radiology Practitioner Assistant:

We would greatly appreciate your participation in a survey of the salaries of radiologist extenders (primarily RAs and R.P.A.s). This information is crucial to efforts to firmly establish the radiologist-extender rung of the radiography career ladder, including job availability and appropriate reimbursement.

We ask that you go to <http://asrt.checkboxonline.com/RAsalary.aspx> within the next couple of weeks to complete the questionnaire online. However, if your Web access is limited and it would be considerably more convenient to complete a hard copy questionnaire, please contact ASRT Research Manager John Culbertson at [jculbertson@asrt.org](mailto:jculbertson@asrt.org) or 800-444-2778, Ext. 1295.

Thank you very much for your participation in the very early phases of establishing this new career path for radiographers such as yourself who have shown their readiness to take on more advanced roles within radiography.

Sincerely,

A handwritten signature in black ink that reads "Dick Harris". The signature is written in a cursive, flowing style.

Dick Harris  
Director of Research



## Radiologist Extender Salary and Functions Survey

Page 1 of 1

Note: Your responses to this questionnaire are and will remain anonymous. Reports of the results of this survey will not include personal or institutional identifying information but will instead be stated as group summaries.

**Did you receive an invitation (postal or e-mail) to participate in this survey of radiologist extender salaries and roles?**  
(Check all that apply.)

- No.
- Yes, via e-mail.
- Yes, via USPS (i.e., in the mail).
- Yes, on the ASRT Web site.
- I'm not sure.
- Other (Please specify below)

**Please specify other invitation:**

### FACILITY DEMOGRAPHICS

**1. Type of facility**

- Community hospital
- Government hospital
- University medical center

- Freestanding clinic
- Private radiology practice
- Group radiology practice
- Other (Please specify below)

Please specify other type of facility:

**2. Radiology services provided in your facility**

(Check all that apply.)

- Radiography
- Computed tomography
- Magnetic resonance imaging
- Mammography
- Nuclear medicine
- CVIT
- PET
- Sonography
- Other (Please specify below)

Please specify other services provided in your facility:

**3. Teaching status of your facility**

Is your facility involved in the teaching of RAs and/or R.P.A.s?

- Yes
- No

**4. Location of facility**

- Rural
- Suburban
- Urban

...State  
(two-letter abbreviation)

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NATURE OF YOUR PRACTICE

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**5. What is your primary title or position?**

- Radiologist Assistant
- Radiology Practitioner Assistant
- Senior/lead technologist
- Department/facility manager or director
- Other (Please specify below)

Please specify other primary title or position:

**6. For how many years have you practiced as an RA or R.P.A.?**

- Less than a year
- 1 - 2 years
- 3 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- More than 20 years
- Not currently practicing as an RA/R.P.A.

**7. What was your primary sphere of employment before beginning practice as an RA or R.P.A.?**

- Radiography
- A discipline/specialty within radiologic technology other than radiography (Please specify below)

- Nursing
- Management
- Other (Please specify below)

Please specify your primary sphere of employment before beginning practice as an RA or R.P.A., if other than radiography, management or nursing:

8. For how many years did you practice in the sphere of employment specified in your answer to question 7?

- Less than a year
- 1 - 2 years
- 3 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- More than 20 years

9. What is the highest level of education you have completed?

- High school + certificate
- Associate degree
- Baccalaureate degree
- Master's degree
- Doctoral degree (including medical)
- Other (Please specify below)

Please specify your other highest level of education completed:

10. Please describe the procedures or functions you perform most frequently that are NOT performed by radiographers or that would require a higher level of supervision if performed by a radiographer not extender. Indicate the frequency with which you perform that procedure or function, and the level of supervision required.

Note: Personal Supervision means the radiologist must be in attendance in the room during the performance.

Supervision means the radiologist must be present in the office suite and immediately available to furnish as throughout the performance of the procedure. General Supervision means the procedure is furnished under direction and control, but the radiologist's presence is not required during the performance of the procedure.

	Description of Procedure or Function Unique to Your Role as a Radiologist Extender	Level of supervision			Frequency with w	
		Personal	Direct	General	Daily or more often	Weekly or more often
1.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

COMPENSATION

11. What best describes your type of compensation?

- Salaried employee of the practice
- Contracted or leased employee of the practice
- Hospital employee supervised by a nonhospital-employed radiologist
- Partner or co-owner of the radiology practice
- Other (Please specify below)

Please specify your other type of compensation:

**12 . What is your annual base salary?**

(Base salary, please. Do not include pay for call, overtime or bonuses.)

**13. Please estimate your total compensation for the past twelve months.**

(Include bonuses, overtime, dividends and other monetary compensation but not the cost of employer-provided health insurance, retirement and other benefits.)

**14. Who pays your salary?**

- Supervising radiologist
- Group radiology practice
- The facility within which I practice
- A multiple-facility HMO or other health care system
- Other (Please specify below)

Please specify other who pays your salary:

---

**15. Please add here any comments or explanation that you feel would help us better understand your answers to questions 1 - 14.**

Thank you very much for your participation in this important survey!

If you have any questions or concerns about the survey, please contact ASRT Research Manager John Culbertson at [jculbertson@asrt.org](mailto:jculbertson@asrt.org).