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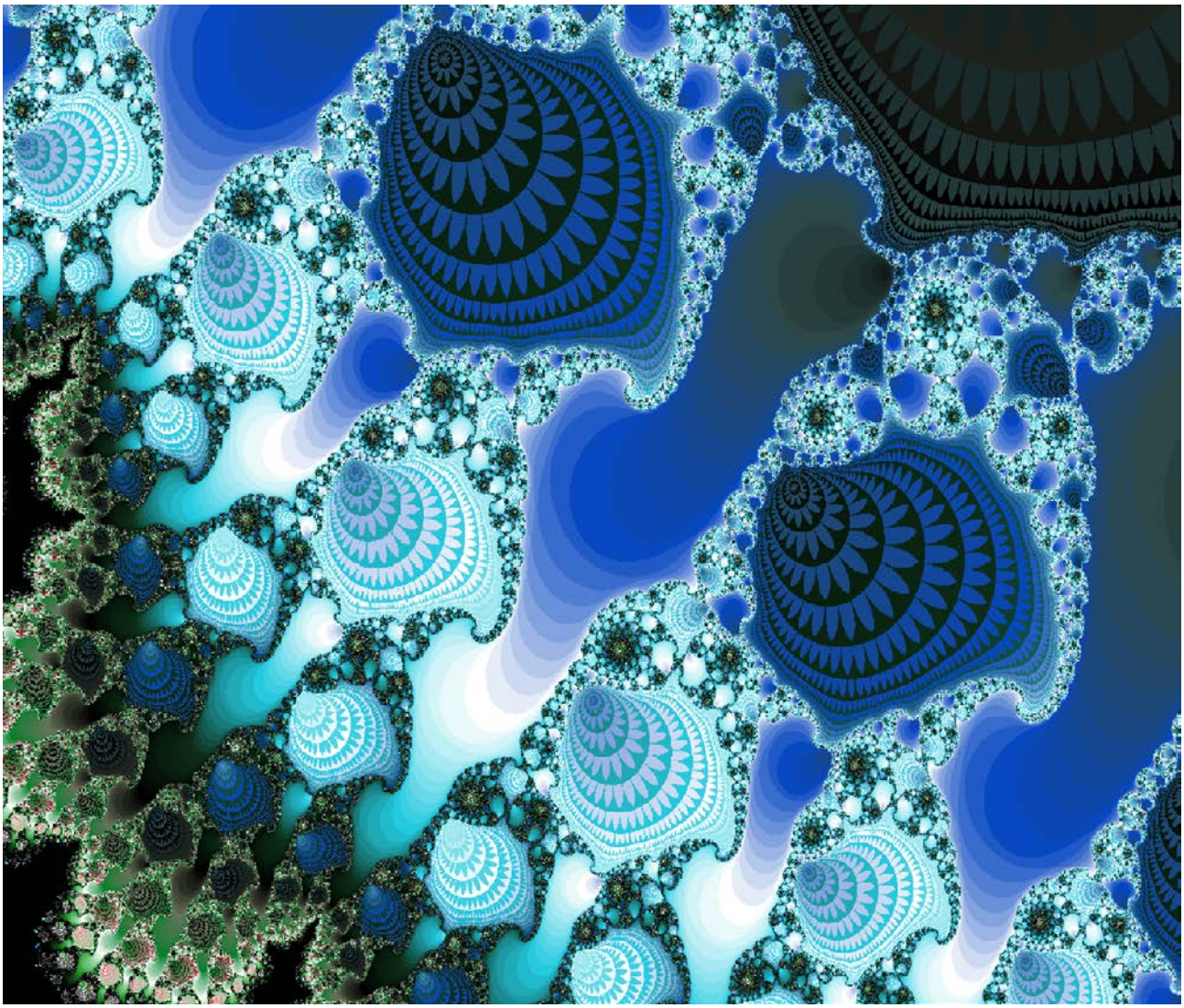
Radiologic Sciences Staffing and Workplace Survey 2013

A Nationwide Survey of Radiologic Technologists
Conducted by the American Society of Radiologic Technologists



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American Society of Radiologic Technologists

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Executive Summary

The ASRT surveys managers of radiology departments across the United States regarding the capacities and staffing levels of their facilities on a biannual basis. In late August 2013 an invitation to participate in the *Radiologic Sciences Staffing and Workplace Survey 2013* was sent via e-mail to 16,184 department managers. At the close of the survey on September 30, 2013, a total of 1,145 responses had been received, yielding an overall response rate of 7.1%. The previous *Radiologic Sciences Staffing and Workplace Survey* was completed in 2011.

At its widest, a sample size of 1,145 yields a margin of error of ± 3.0% (at the 95% confidence interval).

Staffing Levels

Respondents indicated the number of budgeted full-time equivalent (FTE) positions at their facility, by discipline, as:

- Radiography/Fluoroscopy (9.2)
- Computed Tomography (CT) (5.4)
- Sonography (4.4)
- Magnetic Resonance Imaging (MR) (3.4)
- Mammography (3.5)
- Nuclear Medicine Technology (3.0)
- Cardiovascular Interventional Technology (CVIT) (4.9)
- Bone Densitometry (1.7)

The figures for budgeted FTEs in each discipline, along with figures on positions that are currently vacant and recruiting, produces an estimate for the percent of unfilled FTE positions in each discipline:

- Radiography (1.7%)
- CT (2.7%)
- Sonography (2.6%)
- MR (3.0%)
- Mammography (1.4%)
- Nuclear Medicine Technology (1.3%)
- CVIT (5.2%)
- Bone Densitometry (1.8%)

Vacancy rates were cross tabulated by region and discipline. An overall mean vacancy rate was computed for these figures. The East-South Central region had the highest estimated vacancy rate at 3.6%, while the New England region had the lowest at 1.1%.

In addition to being asked to specify their number of budgeted positions, and the number of positions currently vacant, respondents were asked several questions regarding their facility's staffing levels.

- In regard to the preceding fiscal year, the majority of respondents characterized their facility as "appropriately staffed" (70.0%); 25.1% described their facility as understaffed, and 4.9% said it was overstaffed.
- When asked whether their department was currently under a hiring freeze, 56.4% of respondents said "no," while the remaining 43.6% said "yes."
- Commenting on their operating budget for the fiscal year, 42.0% said it had remained the same over the last fiscal year; 35.6% said it had decreased, and 22.4% said it had increased.

Longitudinal Tracking of Staffing Trends

The ASRT has been tracking staffing levels in terms of mean budgeted full-time equivalents (FTEs) and estimated percent of unfilled positions since 2003. From 2003 to 2011, the staffing survey was sent to facility managers biannually. With 10 years of data available, the ASRT is able to provide a look at long-term trends in staffing.

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- Since 2003, radiography has seen a loss in terms of the number of budgeted FTEs per facility. In 2003 there were an average of 10.1 FTEs in radiography per facility, slipping to 9.2 in 2013.
- All other modalities have seen growth in the number of budgeted FTEs per facility since 2003. Highlights include CT, which rose from 3.4 in 2003 to 5.4 in 2013. Similarly, CVIT grew from 0.9 budgeted FTEs per facility in 2003 to 4.9 in 2013.
- Vacancy rates have declined across the board over the last ten years. In 2003, the discipline with the lowest vacancy rate was mammography, at 7.2%, while the highest, CVIT, was 14.6%. By 2013, the highest vacancy rate was still in CVIT; however, it was only 5.2%; the lowest vacancy rate was in nuclear medicine technology, at 1.3%.

Work Volume

Respondents were asked about their patient throughput and the number of machines used in their facility in the past year:

- In radiography, the average facility imaged 20,326 patients and had 4.5 machines.
- In CT, the average facility imaged 10,279 patients and had 2.0 machines.
- In sonography, the average facility imaged 6,457 patients and had 3.2 machines.
- In MR imaging, the average facility imaged 4,272 patients and had 1.8 machines.
- In mammography, the average facility imaged 6,524 patients and had 2.3 machines.
- In nuclear medicine, the average facility imaged 2,497 patients and had 2.2 machines.
- In CVIT, the average facility imaged 2,926 patients and had 2.4 machines.
- In bone densitometry, the average facility imaged 1,177 patients and had 1.3 machines.

Facility Demographics

Respondents were asked a number of questions pertaining to the nature and location of their facility:

- The majority (53.1%) indicated that they work in a hospital (38.5% at not-for-profit hospitals alone); 13.2% work at a clinic, 12.6% work at imaging centers, 9.5% work in a physician's office, 1.8% work in education, 1.4% work for a mobile unit, and 1.1% work for a corporation. An additional 7.3% listed their workplace as "other."
- Among those working in hospitals, the mean number of beds at their facility was 256.
- When asked to identify the location of their facility, 39.4% said they work in a suburban location; 34.9% said their location was in an urban area, and 25.7% said it was rural.

Workforce Demographics

Respondents were asked several questions pertaining to the age and longevity of the workforce at their facility:

- The average age of respondents is 52 years.
- The average age technologists retire from their facility is 64.
- When asked how many more years they planned to work in the radiologic sciences, the average respondent said they would work another 13 years. In conjunction with the average age of survey respondents,

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this suggests that the average respondent plans to retire at age 65.

Respondents were also asked several questions relating to turnover in their department over the last two years.

- The average department saw a total of 1.2 FTEs leave for various reasons in 2011. On average, the most common reasons for departure were layoffs (an average of .27 FTEs) and termination with cause (an average of .26 FTEs).
- In 2012, the average department saw a total of 1.5 FTEs depart for various reasons. The most common cause was personal reasons (an average of .35 FTEs). Layoffs and termination with cause followed with an average of .27 FTEs each.

Calculation of Percent Vacancy Rates

The estimated proportion of unfilled positions for a given discipline for the population of U.S. radiology facilities is defined as:

(Mean number of vacant and recruiting FTEs per facility) ÷ (Mean number of budgeted FTEs per facility)

For example, in CT the mean vacant and recruiting FTE positions is equal to 0.15; when this figure is divided by the mean budgeted FTE of 5.4 for CT, it yields a percentage of unfilled FTE positions in CT of 2.7%.

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Staffing Levels

Please provide information on the following services provided at your primary workplace:

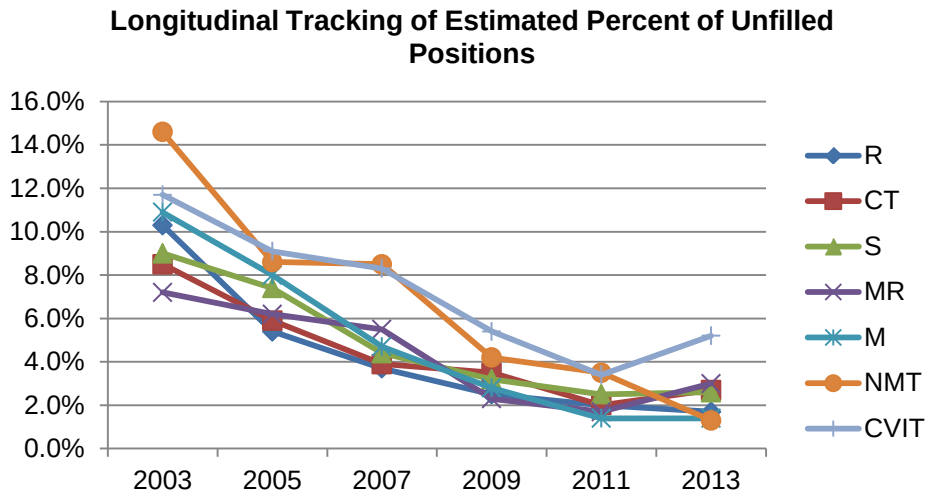
Discipline	N	Mean Budgeted FTEs	*SD*	Mean Vacant and Recruiting FTEs	*SD*	Estimated Percent Unfilled FTE Positions
R	650	**9.2**	14.0	**.15**	.58	**1.7%**
CT	486	**5.4**	7.6	**.15**	.99	**2.7%**
S	485	**4.4**	6.7	**.12**	.58	**2.6%**
MR	436	**3.4**	4.4	**.11**	.66	**3.0%**
M	421	**3.5**	4.4	**.05**	.30	**1.4%**
NMT	322	**3.0**	2.5	**.04**	.34	**1.3%**
CVIT	159	**4.9**	4.4	**.25**	.99	**5.2%**
BD	261	**1.7**	1.5	**.03**	.25	**1.8%**

Abbreviations: R = radiography; CT= computed tomography; S = sonography; MR = magnetic resonance imaging; M = mammography; NMT = nuclear medicine technology; CVIT = cardiovascular interventional technology; BD = bone densitometry.

Longitudinal Tracking of Estimated Percent of Unfilled Positions

Discipline	2003	2005	2007	2009	2011	2013
R	10.3%	5.4%	3.7%	2.5%	2.0%	**1.7%**
CT	8.5%	5.9%	3.9%	3.5%	2.0%	**2.7%**
S	9.0%	7.4%	4.4%	3.2%	2.5%	**2.6%**
MR	7.2%	6.2%	5.5%	2.3%	1.7%	**3.0%**
M	10.9%	8.0%	4.7%	2.8%	1.4%	**1.4%**
NMT	14.6%	8.6%	8.5%	4.2%	3.5%	**1.3%**
CVIT	11.7%	9.1%	8.3%	5.4%	3.4%	**5.2%**
BD[a]	.	.	.	.	.	**1.8%**

[a]*First year of tracking this discipline*



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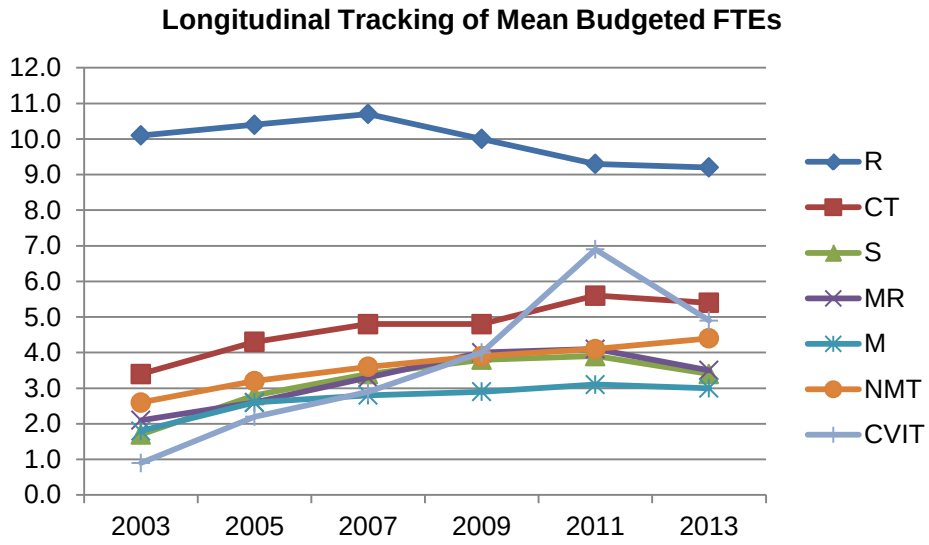
Longitudinal Tracking of Mean Budgeted FTEs

Discipline	2003	2005	2007	2009	2011	2013
R	10.1	10.4	10.7	10	9.3	**9.2**
CT	3.4	4.3	4.8	4.8	5.6	**5.4**
S	2.6	3.2	3.6	3.9	4.1	**4.4**
MR	1.7	2.8	3.4	3.8	3.9	**3.4**
M	2.1	2.6	3.3	4	4.1	**3.5**
NMT	1.8	2.6	2.8	2.9	3.1	**3.0**
CVIT	0.9	2.2	2.9	4	6.9	**4.9**
BD[a]						**1.7**

[a]*First year of tracking this discipline*



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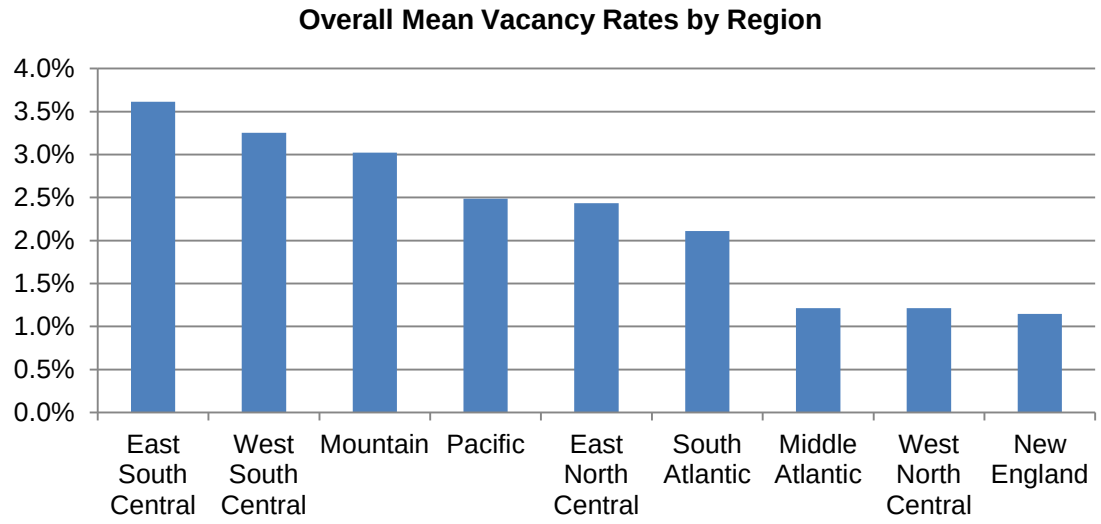
Estimated Vacancy Rates by Region[a]

Discipline	Statistic	East South Central	West South Central	Mountain	Pacific	East North Central	South Atlantic	Middle Atlantic	West North Central	New England
R	N	57	109	100	64	170	150	93	96	49
	%	2.9%	2.0%	2.3%	1.6%	1.1%	1.5%	1.8%	1.0%	0.4%
CT	N	34	47	78	59	54	80	31	52	39
	%	10.9%	2.4%	1.9%	2.2%	1.5%	2.2%	1.7%	1.7%	1.5%
S	N	35	53	75	60	52	81	31	49	36
	%	2.5%	2.9%	5.3%	1.6%	2.1%	2.0%	0.4%	1.5%	1.7%
MR	N	31	45	70	53	44	76	31	39	37
	%	4.1%	4.8%	2.3%	1.7%	7.8%	1.9%	0.9%	2.4%	1.6%
M	N	31	43	65	50	45	73	27	43	30
	%	0.8%	0.9%	3.3%	0.8%	0.0%	1.4%	2.3%	0.0%	1.8%
NMT	N	23	39	54	37	35	48	27	20	30
	%	0.0%	1.6%	1.4%	4.4%	2.0%	1.5%	0.0%	0.0%	0.0%
CVIT	N	13	24	16	22	18	25	16	7	12
	%	4.3%	12.4%	1.3%	2.1%	11.7%	2.4%	0.0%	2.7%	1.9%
BD	N	17	25	42	37	24	39	18	28	23
	%	0.0%	3.0%	2.3%	5.2%	0.0%	3.7%	0.0%	0.0%	0.0%
Overall Mean		**3.6%**	**3.3%**	**3.0%**	**2.5%**	**2.4%**	**2.1%**	**1.2%**	**1.2%**	**1.1%**

[a]***East-South Central****: Kentucky, Tennessee, Mississippi and Alabama*
West-South Central*: Oklahoma, Texas, Arkansas and Louisiana*
Mountain*: Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, and New Mexico*
Pacific*: Alaska, Washington, Oregon, California and Hawaii*
East-North Central*: Wisconsin, Michigan, Illinois, Indiana and Ohio.*
South Atlantic*: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Caroline and Georgia.*
Mid-Atlantic*: New York, Pennsylvania and New Jersey.*
West-North Central*: Missouri, North Dakota, South Dakota, Nebraska, Kansas, Minnesota and Iowa.*
New England*: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.*



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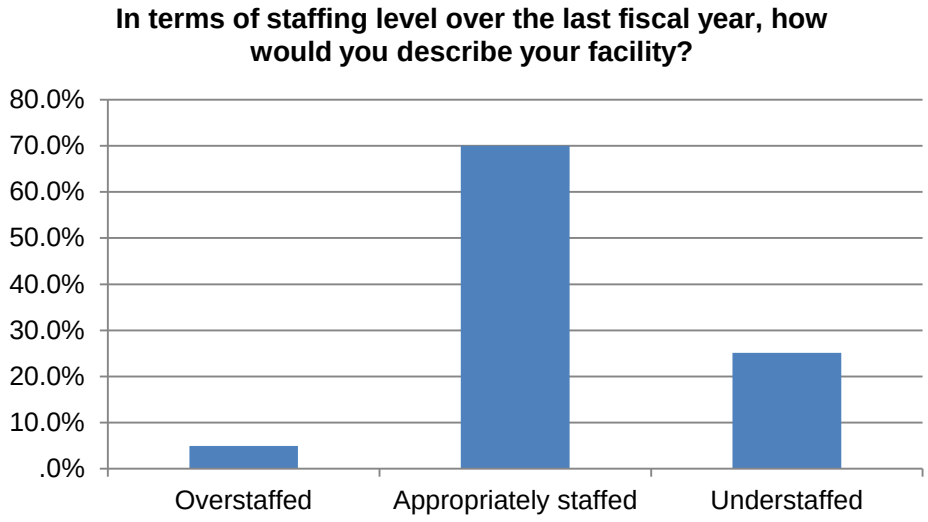
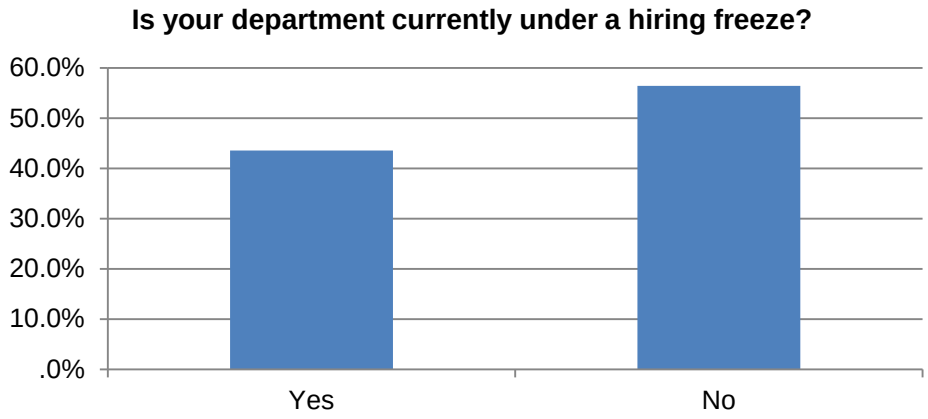
In terms of staffing level over the last fiscal year, how would you describe your facility?

	Frequency	Valid Percent
Overstaffed	53	4.9%
Appropriately staffed	756	70.0%
Understaffed	271	25.1%
Total	1080	100.0%



Is your department currently under a hiring freeze?

	Frequency	Valid Percent
Yes	467	43.6%
No	605	56.4%
Total	1072	100.0%



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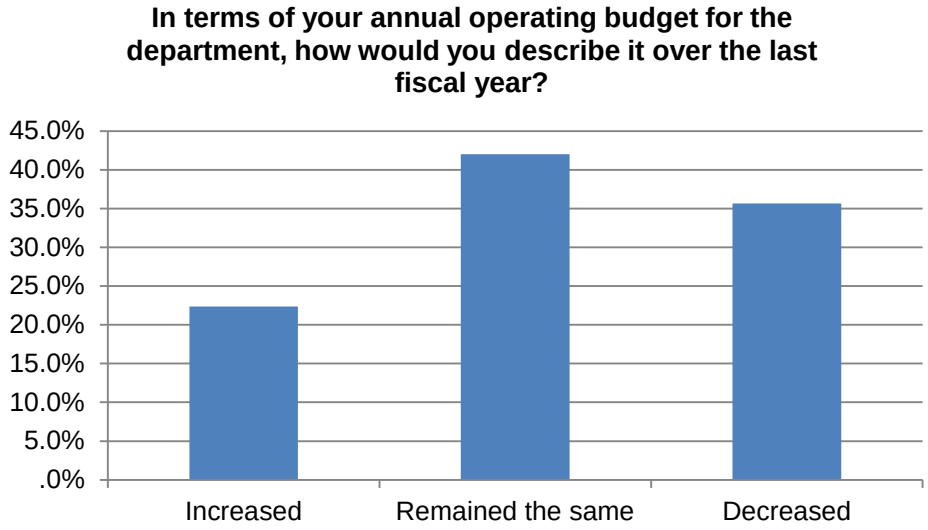
In terms of your annual operating budget for the department, how would you describe it over the last fiscal year?

	Frequency	Valid Percent
Increased	236	22.4%
Remained the same	443	42.0%
Decreased	376	35.6%
Total	1055	100.0%



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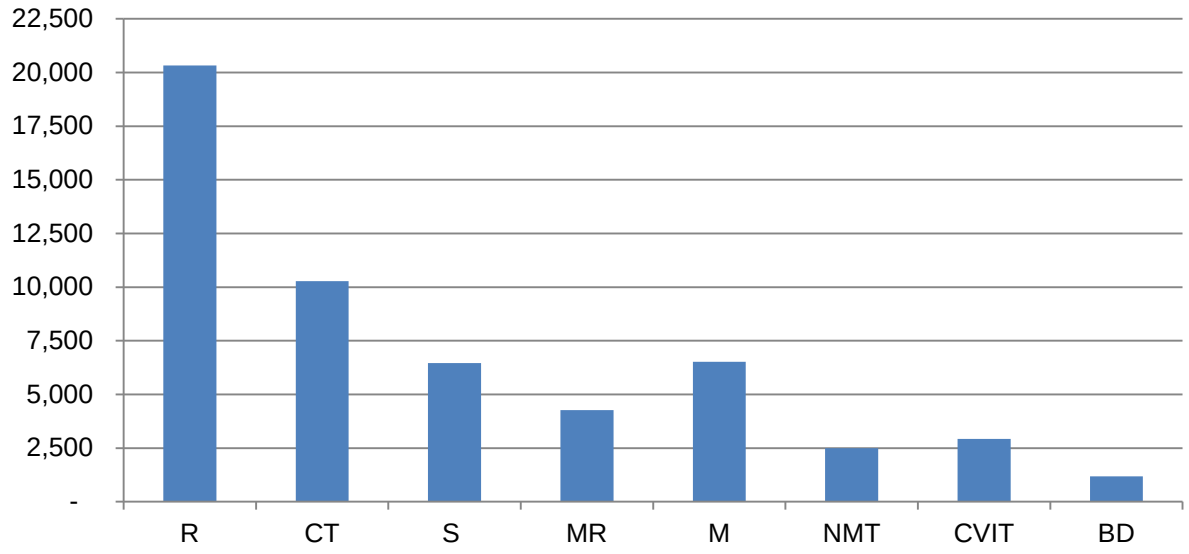
Work Volume

Please provide the number of patients imaged per year at your primary workplace:

	N	Mean	*SD*	5th Percentile	25th Percentile	50th Percentile (Median)	75th Percentile	95th Percentile
R	443	**20,326**	32,048	341	2,454	7,500	24,588	87,255
CT	314	**10,279**	15,319	430	1,557	3,609	12,600	39,040
S	316	**6,457**	8,284	355	1,633	3,933	8,250	21,700
M	289	**4,272**	5,120	329	1,216	2,800	5,127	13,729
MR	282	**6,524**	8,292	517	1,493	3,950	7,915	22,428
NMT	200	**2,497**	3,627	103	675	1,471	2,675	9,250
CVIT	102	**2,926**	3,456	151	1,010	1,884	3,400	9,267
BD	228	**1,177**	1,822	56	245	600	1,300	4,125

Mean number of patients imaged per year at your primary workplace



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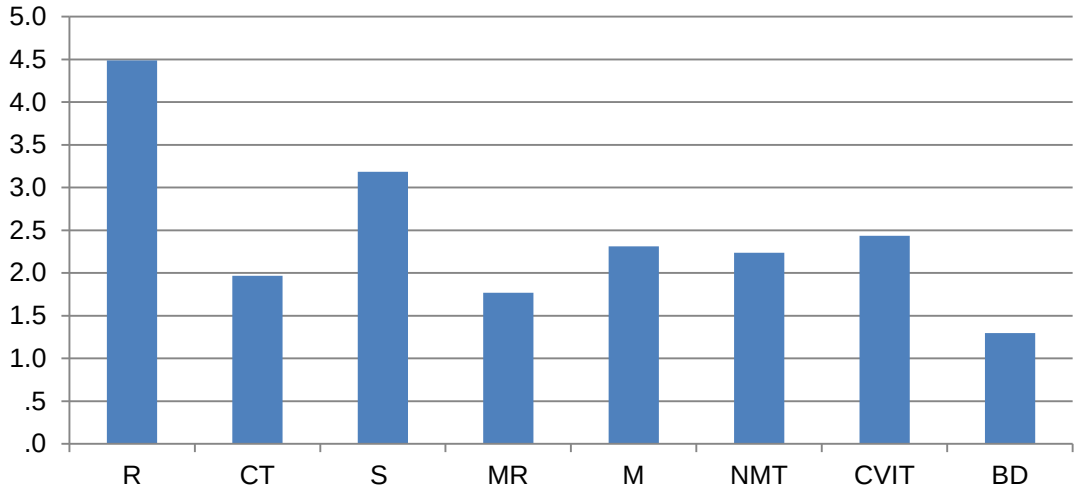
Please indicate the number of imaging machines of each type at your facility:

	N	Mean	*SD*	5th Percentile	25th Percentile	50th Percentile (Median)	75th Percentile	95th Percentile
R	585	**4.5**	6.5	.	1.4	2.5	5.4	13.1
CT	435	**2.0**	2.7	.	.	1.5	2.3	4.8
S	429	**3.2**	3.9	.	1.4	2.3	3.6	8.1
M	389	**1.8**	2.5	.	.	1.4	1.9	4.5
MR	377	**2.3**	3.1	.	.	1.6	2.5	6.8
NMT	285	**2.2**	1.9	.	1.1	1.8	2.9	5.5
CVIT	142	**2.4**	2.2	.	1.1	1.8	2.9	6.8
BD	308	**1.3**	1.5	.	.	1.1	1.6	2.5

Mean number of imaging machines of each type at your facility



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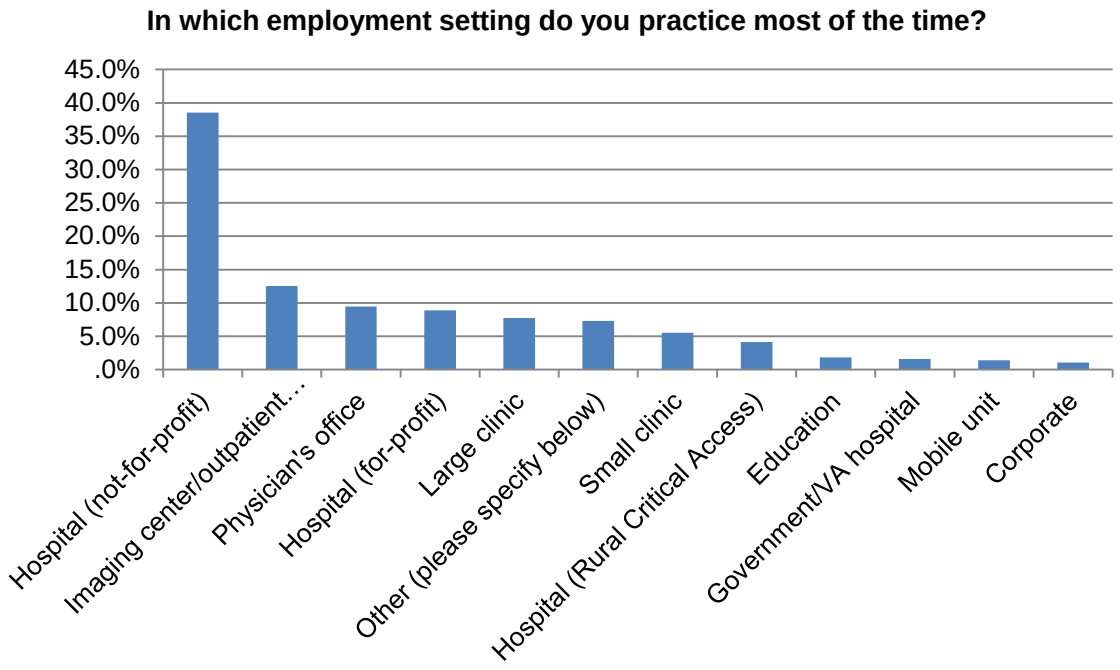
Facility Demographics

In which employment setting do you practice most of the time?

	Frequency	Valid Percent
Hospital (not-for-profit)	439	38.5%
Imaging center/outpatient imaging facility	143	12.6%
Physician's office	108	9.5%
Hospital (for-profit)	101	8.9%
Large clinic	88	7.7%
Other (please specify below)	83	7.3%
Small clinic	63	5.5%
Hospital (Rural Critical Access)	47	4.1%
Education	21	1.8%
Government/VA hospital	18	1.6%
Mobile unit	16	1.4%
Corporate	12	1.1%



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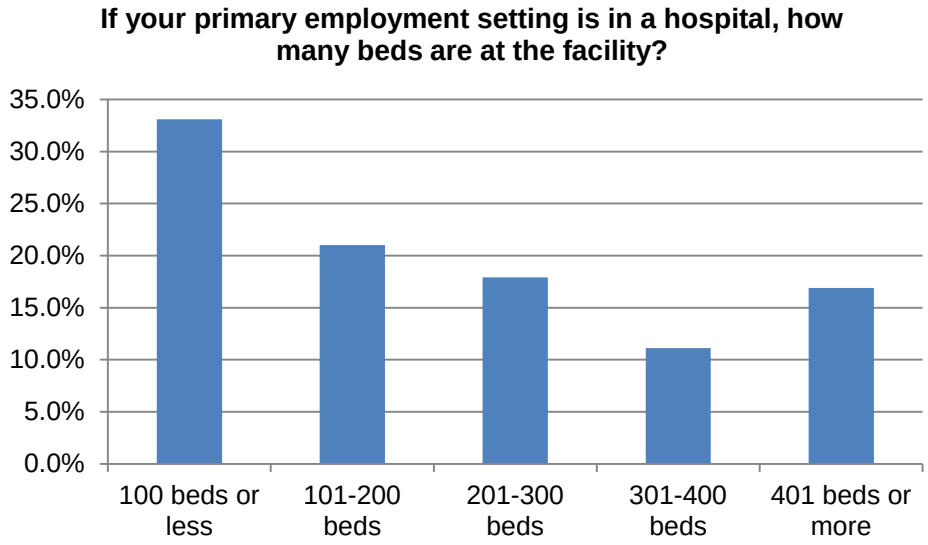
If your primary employment setting is in a hospital, how many beds are at the facility?

	Frequency	Valid Percent	Cumulative Percent
100 beds or less	194	33.1%	33.1%
101-200 beds	123	21.0%	54.1%
201-300 beds	105	17.9%	72.0%
301-400 beds	65	11.1%	83.1%
401 beds or more	99	16.9%	100.0%
Total	586		
Mean number of beds	**256 (*SD*=258)**		
Percentiles	5th=23, 25th=75, 50th (Median)=200, 75th=347, 95th=760		



State

State	N	State	N	State	N	State	N	State	N
AK	12	HI	4	ME	32	NJ	11	SD	13
AL	4	IA	6	MI	32	NM	57	TN	24
AR	27	ID	32	MN	39	NV	47	TX	52
AZ	19	IL	38	MO	12	NY	4	UT	6
CA	79	IN	12	MS	28	OH	34	VT	4
CO	13	KS	17	MT	4	OK	19	VA	31
CT	19	KY	13	NC	11	OR	19	WA	19
DE	2	LA	27	ND	5	PA	47	WI	11
FL	52	MA	8	NE	8	RI	8	WV	32
GA	31	MD/DC	21	NH	23	SC	14	WY	11

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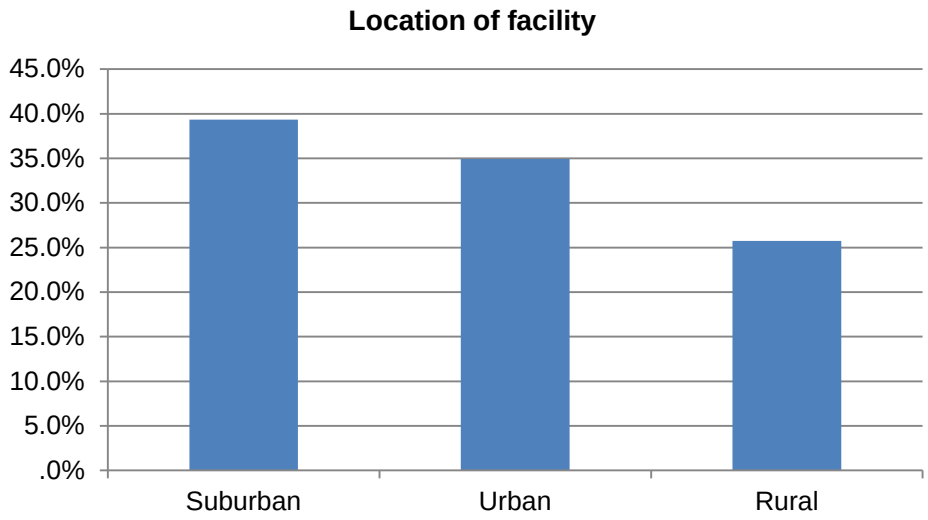
Location of facility

	Frequency	Valid Percent
Suburban	436	39.4%
Urban	387	34.9%
Rural	285	25.7%
Total	1108	100.0%



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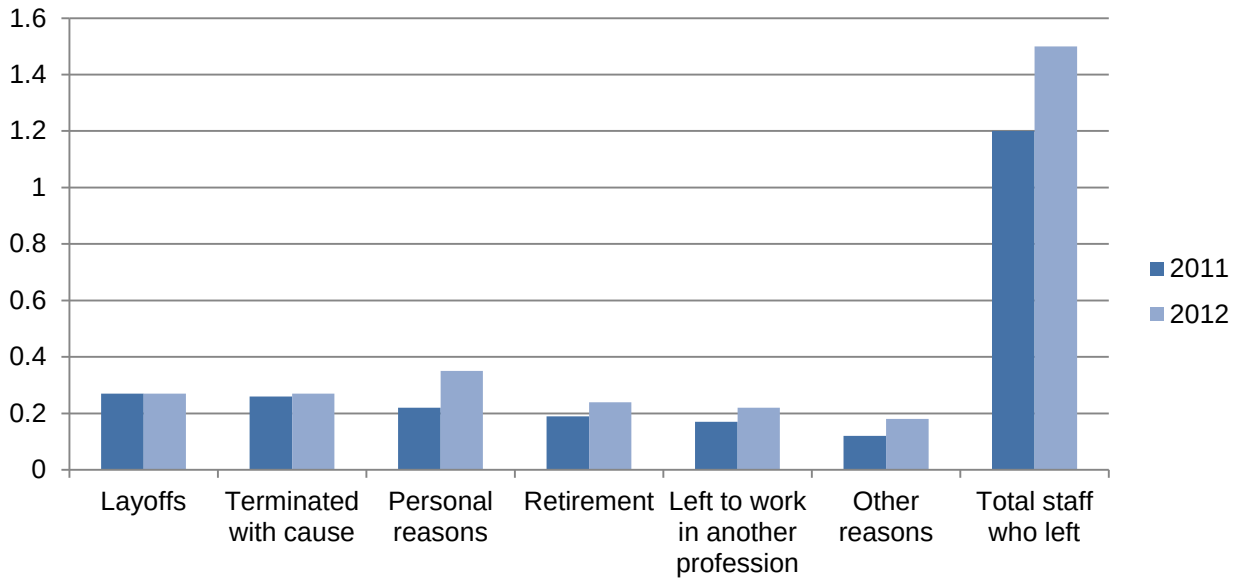
Workforce Demographics

Over the last two years, how many full-time equivalent (FTE) radiologic technologists in your department have left for any of the following reasons?

		2011						2012				
	N	Mean	*SD*	Median	Min	Max	N	Mean	*SD*	Median	Min	Max
Layoffs	1145	**.27**	3.1	.03	0	100	1145	**.27**	1.2	.05	0	25
Terminated with cause	1145	**.26**	.75	.17	0	10	1145	**.27**	.82	.04	0	11
Personal reasons	1145	**.22**	1.0	.06	0	21	1145	**.35**	1.4	.11	0	25
Retirement	1145	**.19**	.52	.12	0	4	1145	**.24**	.68	.09	0	6
Left to work in another profession	1145	**.17**	.57	.11	0	6	1145	**.22**	.73	.03	0	8
Other reasons	1145	**.12**	.50	.02	0	5	1145	**.18**	.67	.02	0	10
Total staff who left	1145	**1.2***	3.8	.17	0	100	1145	**1.5***	3.1	.17	0	35

*The mean difference in total staff who left from 2011 to 2012 was statistically significant: $t(2288) = 2.07$, $p = 0.04$.

Over the last two years, how many full-time equivalent (FTE) radiologic technologists in your department have left for any of the following reasons?



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	N	Mean	*SD*	5th Percentile	25th Percentile	50th Percentile (Median)	75th Percentile	95th Percentile
Age of Respondent	1131	**52**	9	35	46	53	58	65
How many more years do you plan to work before you retire from the radiologic sciences?	1105	**13**	9	2	5	11	19	30
At what age do *you* plan to retire from the radiologic sciences?[a]	1099	**65**	5	56	63	65	68	72
At what age do technologists typically retire from your department?	412	**64**	4	59	62	65	66	68

[a] *Mean planned retirement age derived from mean age and mean number of years respondent plans to work before retirement.*

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