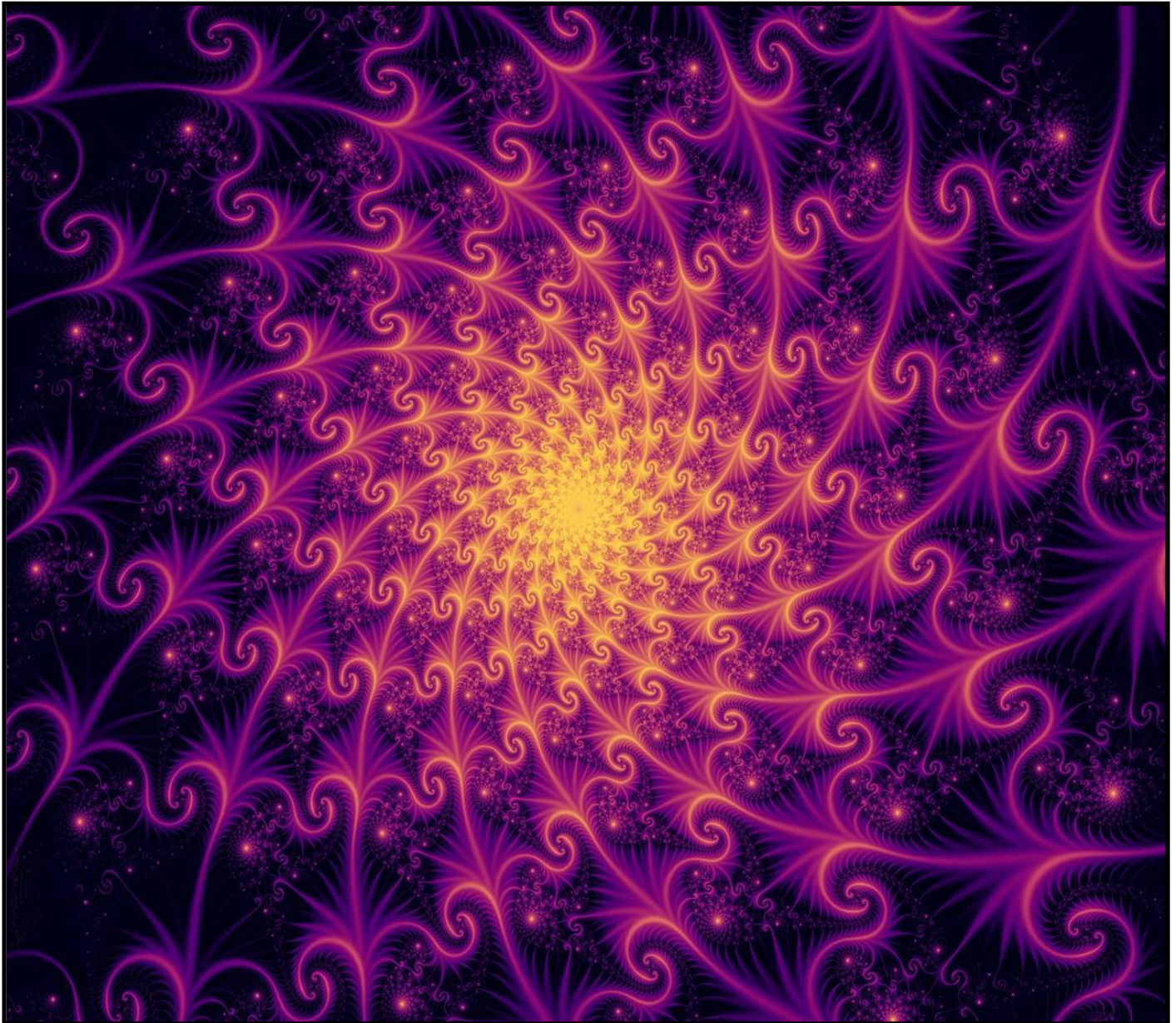


# Radiologic Sciences Workplace Survey 2011

A Nationwide Survey of Department Managers Conducted by the American Society of Radiologic Technologists  
Reported August 2011



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On the Cover: *Fear-Hope Spirals Mandelbrot* by J. Wolfe  
 Courtesy of the Fractal Foundation  
[Fractalfoundation.org](http://Fractalfoundation.org)

## Executive Summary

In late May 2011 an invitation to participate in the Radiologic Sciences Workplace survey was sent via e-mail to 18,099 department managers. At the close of the survey on July 8, 2011, a total of 2,142 responses had been received, yielding an overall response rate of 11.8%.

The sample size of 2,142 yields a margin of error of  $\pm 2.1\%$  (at the 95% confidence interval).

To keep the report at a minimal length, responses to open-ended questions were not included, but are available upon request.

### Demographics

- Approximately 88% of respondents indicated that they are currently working in the radiologic sciences.
  - ◊ Of those who are no longer working in the radiologic sciences field, 32.9% stated that they made a career change, 25.6% were retired and an additional 20.7% stated job unavailability.
- 32.3% identified themselves as supervisors or managers, with 25.7% indicating senior technologists or therapists.
- 37.0% work in a not-for-profit hospital, with 12.7% working in an imaging center or outpatient facility and 11.3% work in a physician's office.

### Facility Services

- The mean number of beds for hospitals participating in the survey was 277 ( $SD=251$ ).
- The majority of departments use mostly digital imaging. With the mean department using 87.2% digital and only 12.8% plain film.
- The mean number of imaging units/machines broken down by disciplines:
  - ◊ R (4.4)
  - ◊ S (3.1)
  - ◊ CVIT (2.7)
  - ◊ M (2.2)
  - ◊ NMT (2.1)
  - ◊ CT (1.9)
  - ◊ MR (1.6)
- 85.3% of respondents indicated having a PACS or image management system, with 40.1% having equipment that uses speech recognition software.
- The majority (65.8%) of those with a cardiovascular/angiography unit indicated a 0% infection rate, with a mean infection rate of 1.0% ( $SD=0.13\%$ ).

### Staffing Levels and Work Volume

Respondents indicated their mean budgeted full-time employees (FTEs) per facility as:

- ◊ R (9.3)
- ◊ CT (5.6)
- ◊ M (4.1)
- ◊ MR (3.9)
- ◊ S (4.1)
- ◊ NMT (3.1)
- ◊ CVIT (6.9)
- ◊ Radiologist (6.7)
- ◊ Physician extender (3.6)
- ◊ Nurse (6.3)

- The budgeted FTEs in each specialty, along with vacant and recruiting figures, produces estimated percent unfilled positions as:

- ◊ R (2.0%)
- ◊ CT (2.0%)
- ◊ M (1.7%)
- ◊ MR (2.5%)
- ◊ S (3.4%)
- ◊ NMT (1.4%)
- ◊ CVIT (3.5%)
- ◊ Radiologist (2.2%)
- ◊ Physician extender (4.8%)
- ◊ Nurse (5.2%)

- The majority of respondents feel that they are appropriately staffed with 3.4% indicating being overstaffed and 24.9% indicating being understaffed.

- The mean number of patients imaged per year broken down by disciplines:

- ◊ R (19,905)
- ◊ CT (11,198)
- ◊ M (7,897)
- ◊ S (6,844)
- ◊ MR (4,612)
- ◊ NMT (3,060)
- ◊ CVIT (3,060)

### Mammography

- The majority of mammography departments primarily use digital imaging, with a mean 84.2% digital and 15.8% plain film.
- 82.6% use computer-aided detection as a second reading method.

### **Calculation of Percent Vacancy Rates**

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

**(mean number of vacant and recruiting FTEs per facility) / (mean number of budgeted FTEs per facility)**

For example, in radiography the mean vacant and recruiting FTE positions is equal to 0.19 , when divided by the mean budgeted FTE of 9.3, this yields a percent of unfilled FTE positions of 2.0%.

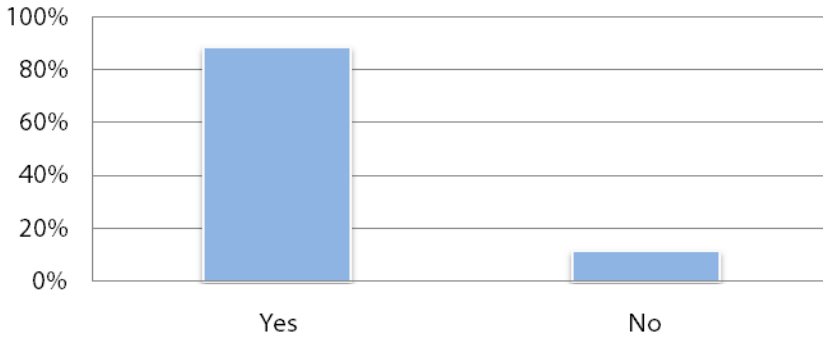
Only facility/discipline combinations for which both the number of budgeted FTEs and the number of vacant and recruiting FTEs were reported were included in the calculation of vacancy rates.

## Demographics

Are you currently working in the radiologic sciences?

	Frequency	Valid Percent
Yes	1894	88.4
No	248	11.6
<b>Total</b>	<b>2142</b>	<b>100.0</b>

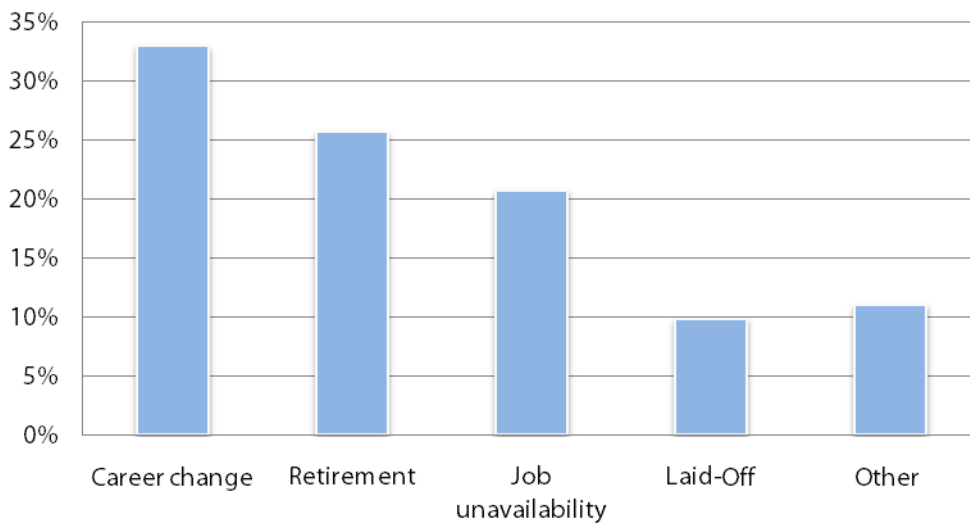
Are you currently working in the radiologic sciences?



If you are no longer employed in the radiologic sciences, choose the primary reason why you left the field.

	Frequency	Valid Percent
Career change	81	32.9
Retirement	63	25.6
Job unavailability	51	20.7
Laid-Off	24	9.8
Other	27	11.0
<b>Total</b>	<b>246</b>	<b>100.0</b>

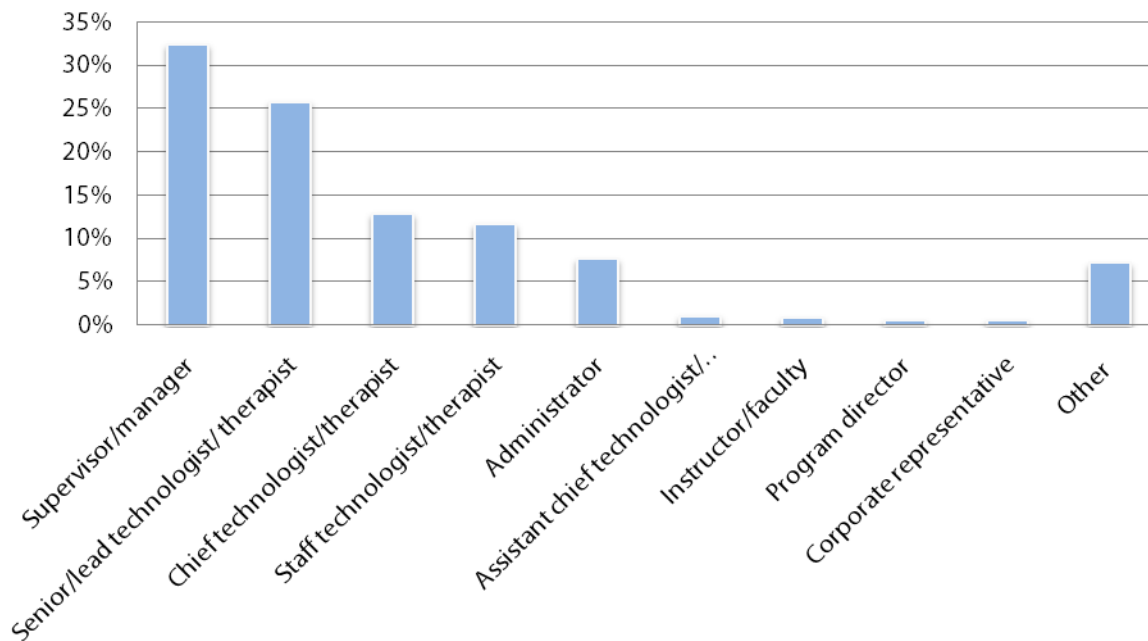
If you are no longer employed in the radiologic sciences, choose the primary reason why you left the field.



**What is your primary job function?**

	<b>Frequency</b>	<b>Valid Percent</b>
Supervisor/manager	610	32.3
Senior/lead technologist/therapist	485	25.7
Chief technologist/therapist	242	12.8
Staff technologist/therapist	220	11.6
Administrator	143	7.6
Assistant chief technologist/therapist	19	1
Instructor/faculty	15	0.8
Program director	10	0.5
Corporate representative	10	0.5
Other	135	7.1
<b>Total</b>	<b>1889</b>	<b>100.0</b>

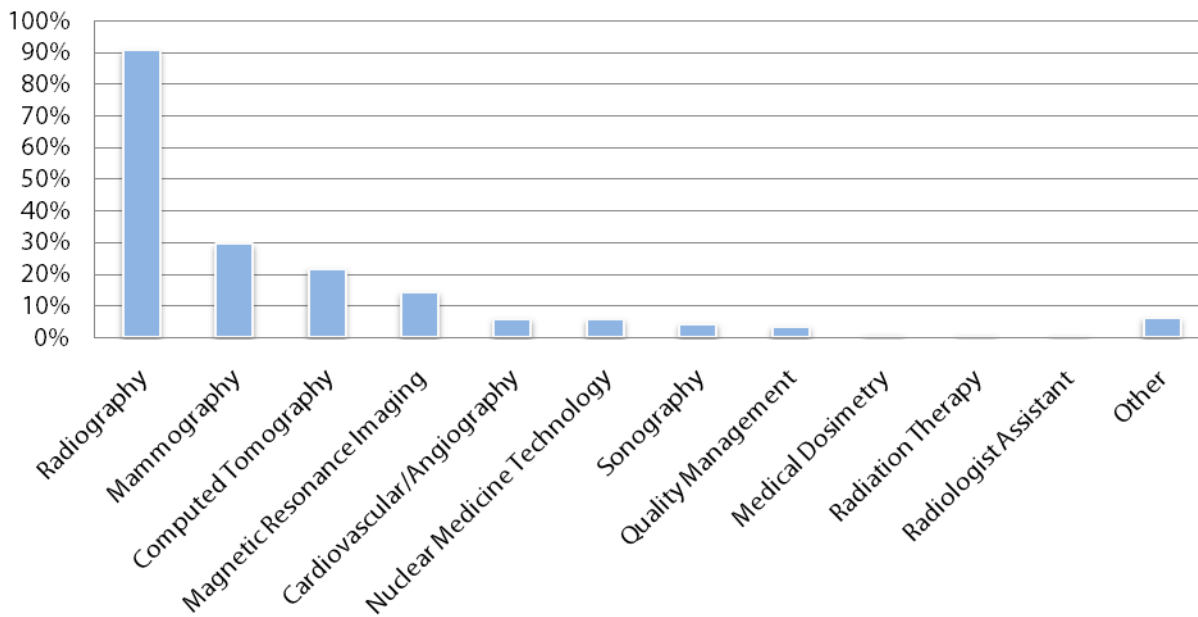
**What is your primary job function?**



Check all of the disciplines in which you are certified:

	Responses	
	N	Percent
Radiography	1709	90.5
Mammography	555	29.4
Computed Tomography	408	21.6
Magnetic Resonance Imaging	266	14.1
Cardiovascular/Angiography	109	5.8
Nuclear Medicine Technology	106	5.6
Sonography	79	4.2
Quality Management	65	3.4
Medical Dosimetry	11	0.6
Radiation Therapy	9	0.5
Radiologist Assistant	8	0.4
Other	113	6.0

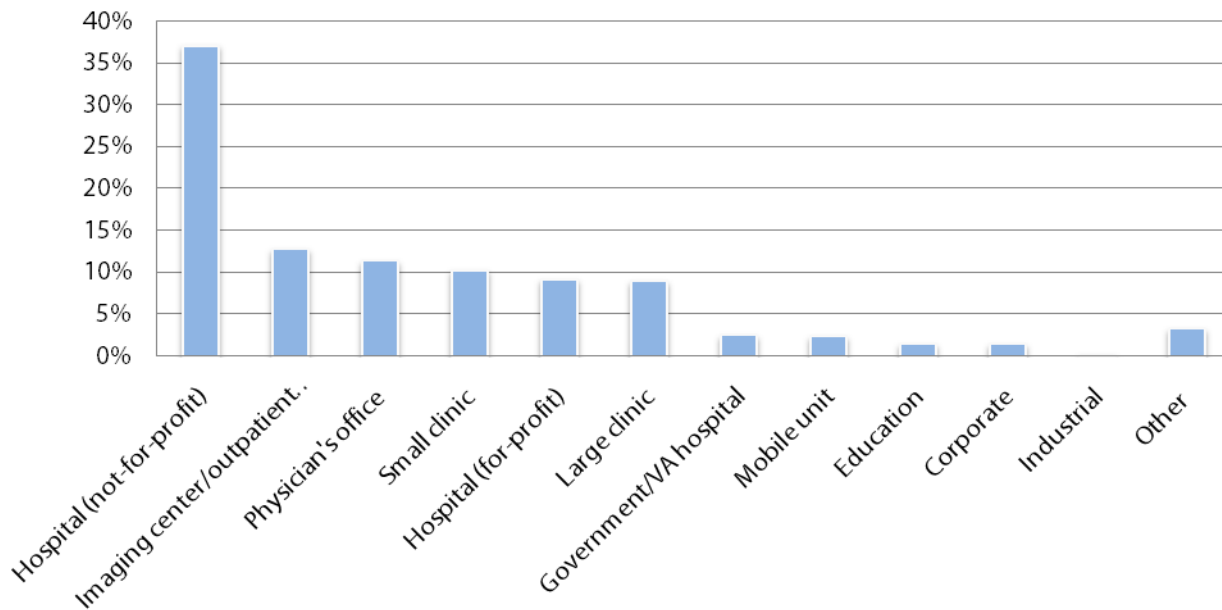
Check all of the disciplines in which you are certified:



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

	Frequency	Valid Percent
Hospital (not-for-profit)	697	37.0
Imaging center/outpatient imaging facility	240	12.7
Physician's office	214	11.3
Small clinic	192	10.2
Hospital (for-profit)	172	9.1
Large clinic	167	8.9
Government/VA hospital	45	2.4
Mobile unit	43	2.3
Education	27	1.4
Corporate	27	1.4
Industrial	1	0.1
Other	61	3.2
<b>Total</b>	<b>1886</b>	<b>100.0</b>

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





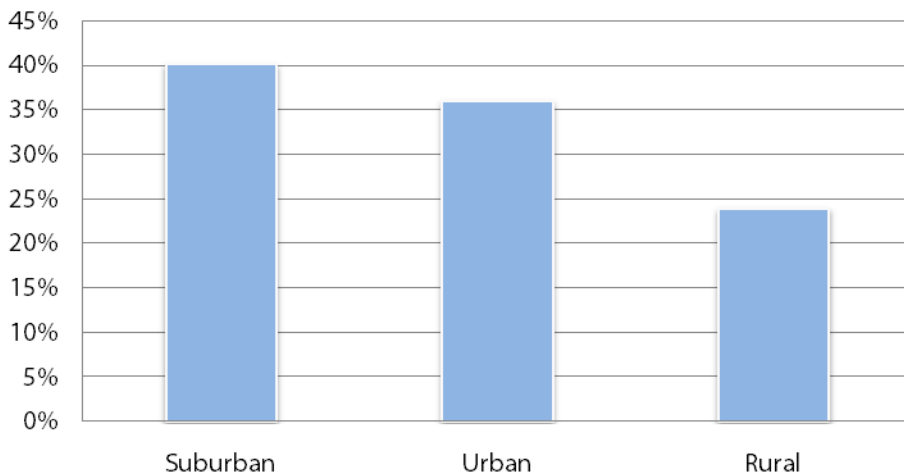
State in which your primary workplace is located:

State	N	State	N	State	N	State	N	State	N
AK	9	HI	9	ME	18	NJ	47	SD	14
AL	29	IA	21	MI	64	NM	14	TN	46
AR	25	ID	17	MN	76	NV	14	TX	71
AZ	46	IL	52	MO	30	NY	102	UT	13
CA	136	IN	46	MS	26	OH	71	VA	55
CO	39	KS	19	MT	6	OK	28	VT	3
CT	18	KY	15	NC	68	OR	24	WA	36
DE	6	LA	28	ND	5	PA	60	WI	52
FL	92	MA	39	NE	23	RI	7	WV	13
GA	41	MD/DC	36	NH	9	SC	23	WY	4

Location of facility:

	Frequency	Valid Percent
Suburban	758	40.1
Urban	679	36.0
Rural	451	23.9
<b>Total</b>	<b>1888</b>	<b>100.0</b>

Location of facility:

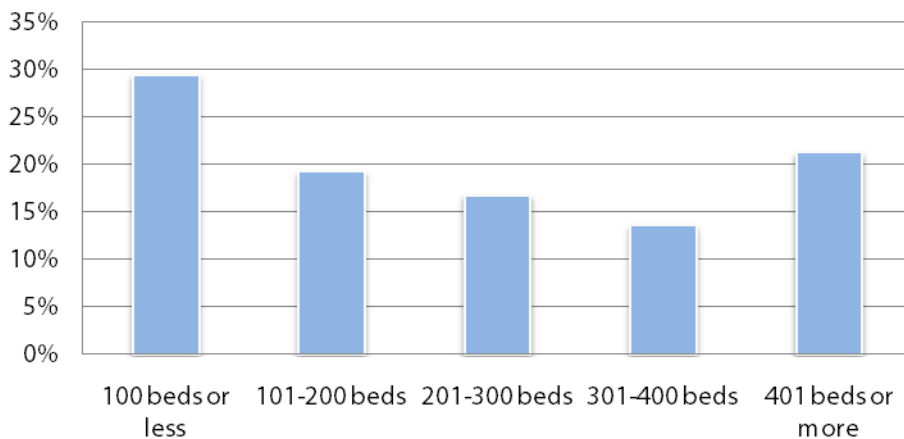


## Facility Demographics and Services

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	261	29.4	29.3
101-200 beds	171	19.2	48.6
201-300 beds	149	16.8	65.4
301-400 beds	120	13.5	78.9
401 beds or more	188	21.1	100.0
Total	889	100.0	
<b>Mean number of beds</b>	<b>277 (SD=251)</b>		
Percentiles	5th=24, 25th=91, 50th=218, 75th=390, 95th=800		

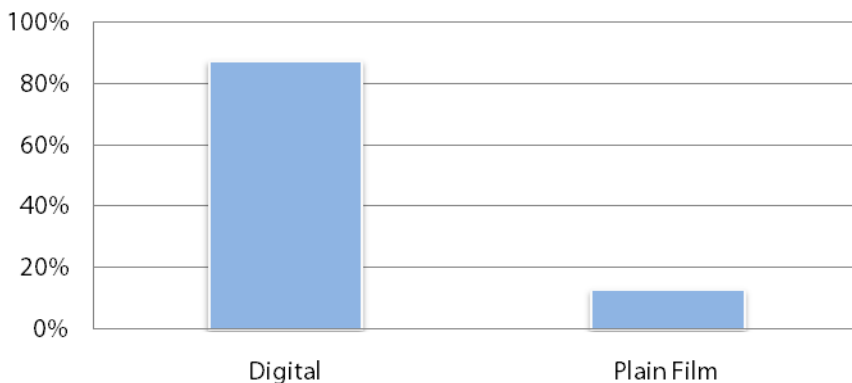
If your primary employment setting is in a hospital, how many beds are at the facility?



Please give the percentage breakdown of how images are recorded in the department you manage.

	Mean	N	SD
Digital	87.2	1855	31.4
Plain Film	12.8		

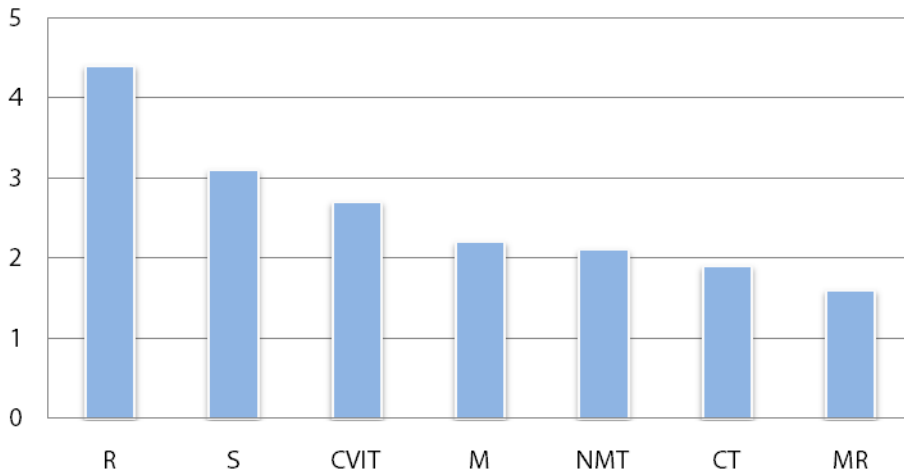
The percentage breakdown of how images are recorded in the department you manage.



Please provide the number of imaging units/machines information at your primary workplace:

	N	Mean	SD	Median	5th Percentile	25th Percentile	75th Percentile	95th Percentile
<b>R</b>	1040	4.4	6.9	2.4	.	1.3	5.3	14.2
<b>S</b>	667	3.1	2.7	2.5	.	1.4	3.9	7.3
<b>CVIT</b>	252	2.7	7.2	1.7	.	1.1	2.7	5.7
<b>M</b>	652	2.2	2.4	1.7	.	.	2.8	5.9
<b>NMT</b>	440	2.1	1.5	1.8	.	1.1	2.8	4.9
<b>CT</b>	705	1.9	2.1	1.5	.	.	2.3	4.4
<b>MR</b>	646	1.6	2.1	1.4	.	.	1.9	3.8

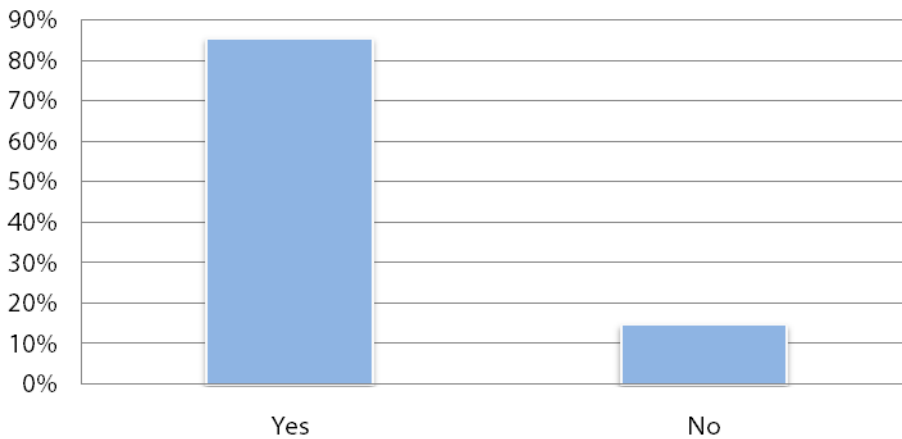
Mean number of imaging units/machines



Does your department have a PACS/image management system?

	Frequency	Valid Percent
Yes	1780	85.3
No	306	14.7
<b>Total</b>	<b>2086</b>	<b>100.0</b>

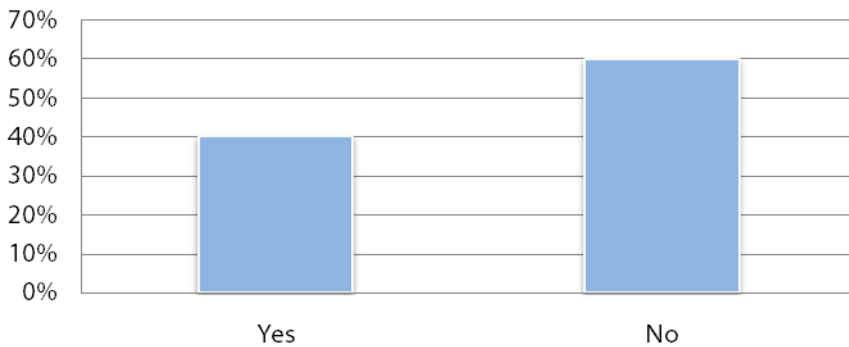
Does your department have a PACS/image management system?



Does any of your equipment use speech recognition software?

	Frequency	Valid Percent
Yes	835	40.1
No	1249	59.9
<b>Total</b>	<b>2084</b>	<b>100.0</b>

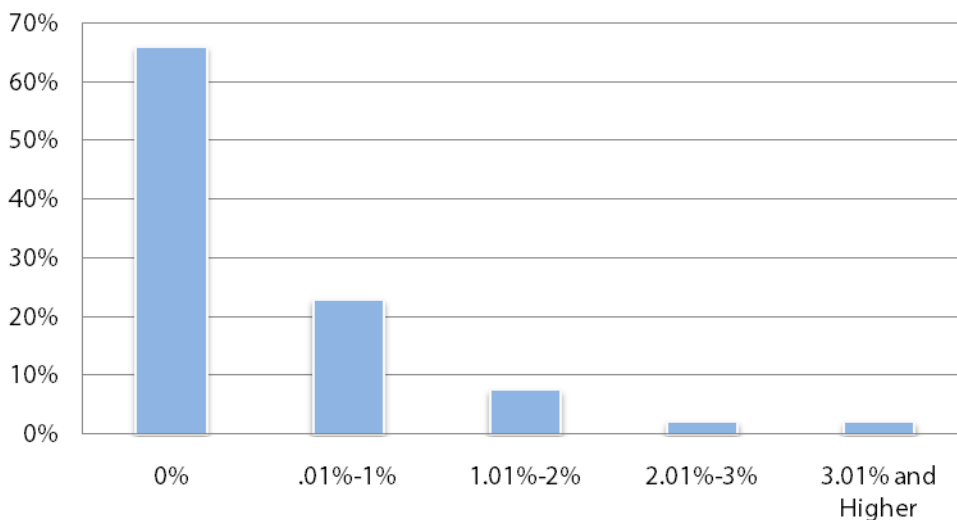
Does any of your equipment use speech recognition software?



If there is a cardiovascular/angiography unit in the department you manage, what is the infection rate percent?

	Frequency	Valid Percent	Cumulative Percent
0%	98	65.8	65.8
0.01%-1%	34	22.8	88.6
1.01%-2%	11	7.4	96.0
2.01%-3%	3	2.0	98.0
3.01% and Higher	3	2.0	100.0
<b>Total</b>	<b>149</b>	<b>100.0</b>	
<b>Mean infection rate</b>	<b>1.0% (SD=.13%)</b>		
<b>Percentiles</b>	<b>5th=NA, 25th=NA, 50th=0.1%, 75th=1.0%, 95th=2.3%</b>		

If there is a cardiovascular/angiography unit in the department you manage, what is the infection rate percent?



## Staffing Levels and Work Volume

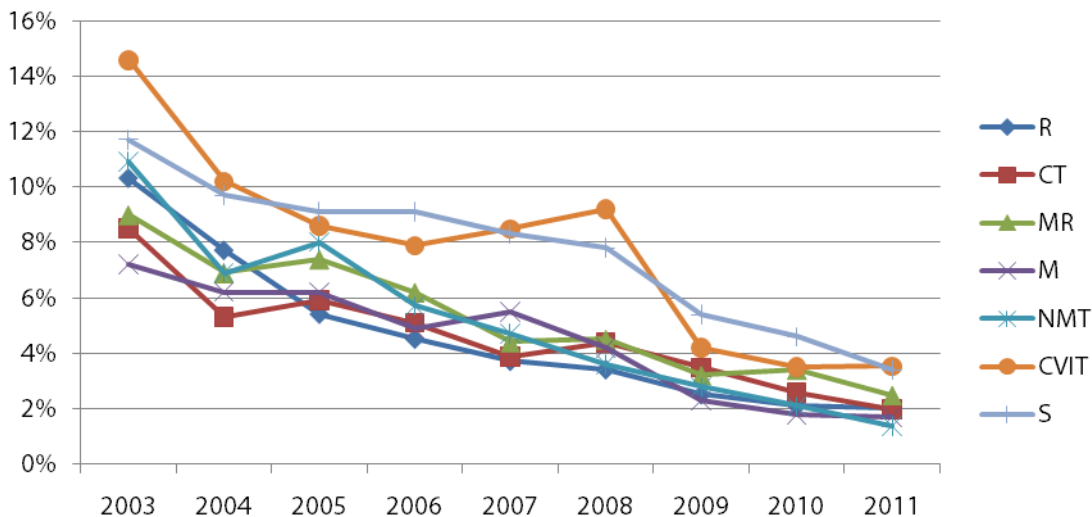
Please provide information on the following services provided at your primary workplace:

Discipline	N	Mean Budgeted FTEs	Mean Vacant and Recruiting FTEs	Estimated Percent Unfilled FTE Positions
R	1122	9.3	0.19	2.0%
CT	781	5.6	0.11	2.0%
M	712	4.1	0.07	1.7%
MR	720	3.9	0.10	2.5%
S	729	4.1	0.14	3.4%
NMT	498	3.1	0.04	1.4%
CVIT	285	6.9	0.24	3.5%
Radiologist	879	6.7	0.15	2.2%
Physician Extender	207	3.6	0.17	4.8%
Nurse	666	6.3	0.33	5.2%

### Longitudinal Tracking of Estimated Percent of Unfilled Positions

	2003	2004	2005	2006	2007	2008	2009	2010	2011
R	10.3%	7.7%	5.4%	4.5%	3.7%	3.4%	2.5%	2.1%	2.0%
CT	8.5%	5.3%	5.9%	5.1%	3.9%	4.4%	3.5%	2.6%	2.0%
MR	9.0%	6.9%	7.4%	6.2%	4.4%	4.5%	3.2%	3.4%	2.5%
M	7.2%	6.2%	6.2%	4.9%	5.5%	4.2%	2.3%	1.8%	1.7%
NMT	10.9%	6.9%	8.0%	5.7%	4.7%	3.6%	2.8%	2.1%	1.4%
CVIT	14.6%	10.2%	8.6%	7.9%	8.5%	9.2%	4.2%	3.5%	3.5%
S	11.7%	9.7%	9.1%	9.1%	8.3%	7.8%	5.4%	4.6%	3.4%

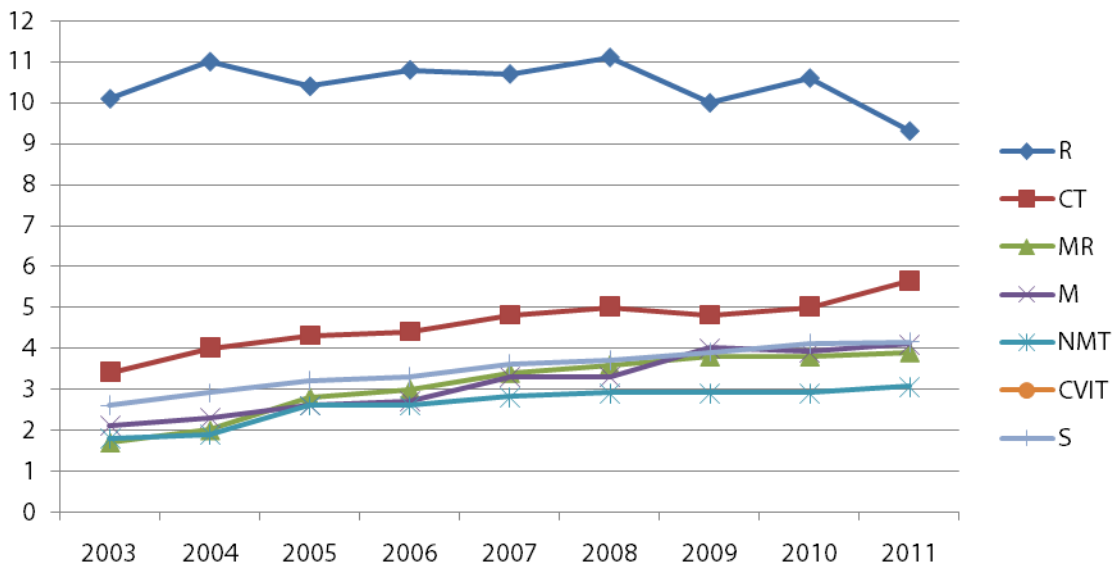
### Longitudinal Tracking of Estimated Percent of Unfilled Positions



Longitudinal Tracking of Mean Budgeted FTEs

	2003	2004	2005	2006	2007	2008	2009	2010	2011
<b>R</b>	10.1	11	10.4	10.8	10.7	11.1	10	10.6	9.3
<b>CT</b>	3.4	4	4.3	4.4	4.8	5	4.8	5	5.6
<b>MR</b>	1.7	2	2.8	3	3.4	3.6	3.8	3.8	3.9
<b>M</b>	2.1	2.3	2.6	2.7	3.3	3.3	4	3.9	4.1
<b>NMT</b>	1.8	1.9	2.6	2.6	2.8	2.9	2.9	2.9	3.1
<b>CVIT</b>	0.9	1.0	2.2	2.4	2.9	3.2	4.0	4.6	6.9
<b>S</b>	2.6	2.9	3.2	3.3	3.6	3.7	3.9	4.1	4.1

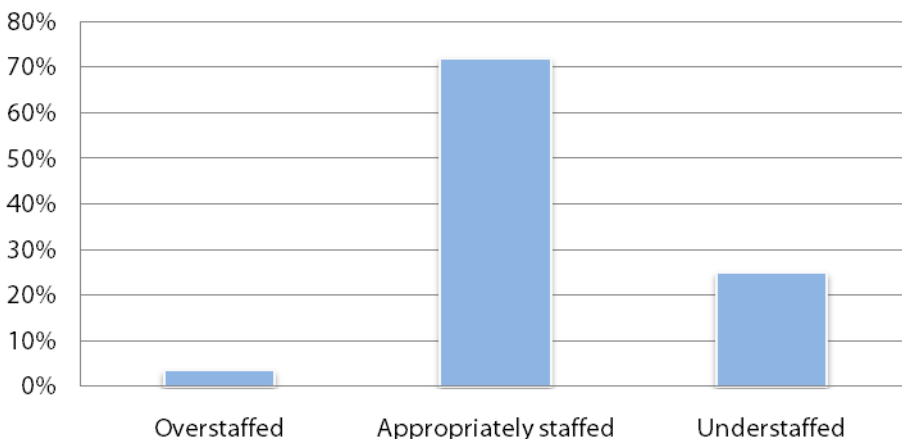
Longitudinal Tracking of Mean Budgeted FTEs



In terms of staffing level, how would you describe your facility?

	Frequency	Valid Percent
Overstaffed	60	3.4
Appropriately staffed	1282	71.8
Understaffed	444	24.9
<b>Total</b>	<b>1786</b>	<b>100.0</b>

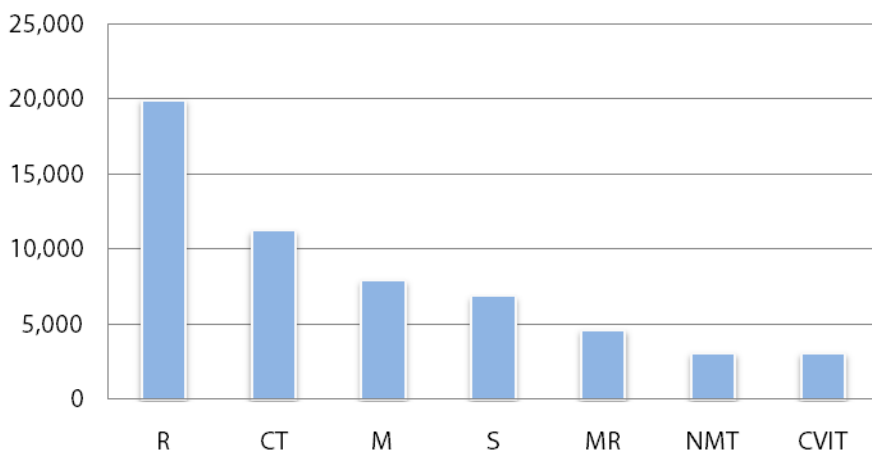
In terms of staffing level, how would you describe your facility?



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

	N	Mean	SD	Median	5th Percentile	25th Percentile	75th Percentile	95th Percentile
<b>R</b>	782	19,905	36,848	6,098	492	1,976	23,200	79,300
<b>CT</b>	492	11,198	16,627	4,973	468	1,808	14,267	40,240
<b>M</b>	486	7,897	10,088	4,463	389	1,584	10,054	29,376
<b>S</b>	451	6,844	9,167	4,013	261	1,534	8,989	20,595
<b>MR</b>	475	4,612	6,201	2,838	333	1,418	5,058	15,132
<b>NMT</b>	286	3,060	4,597	1,567	194	720	3,223	10,160
<b>CVIT</b>	164	3,060	3,670	1,890	157	814	3,673	10,386

Mean number of patients imaged per year

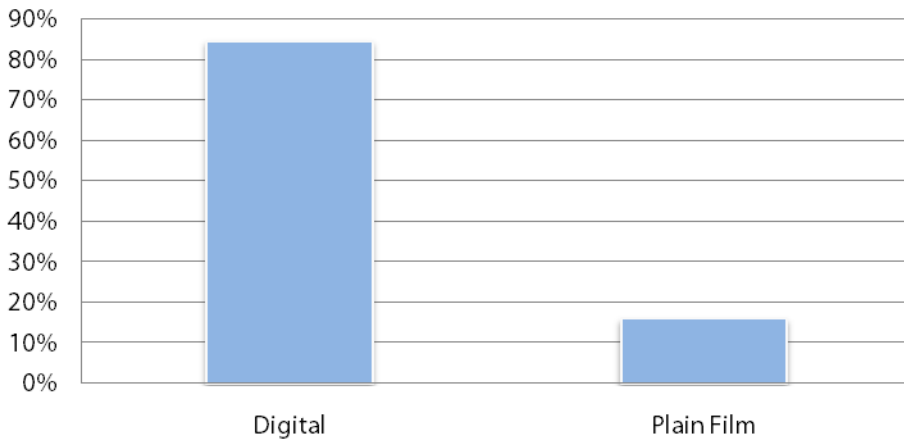


## Mammography

If there is a mammography unit in the department you manage, please give the percentage breakdown of how images are recorded.

	Mean	N	SD
Digital	84.2	773	35.7
Plain Film	15.8		

Please give the percentage breakdown of how images are recorded.



If there is a mammography unit in the department you manage, which second reading method do you use?

	Responses	
	N	Percent
C.A.D. (computer-aided detection)	617	82.6
M.D. (doctor of medicine)	161	21.6
Other	27	3.6

If there is a mammography unit in the department you manage, which second reading method do you use?

