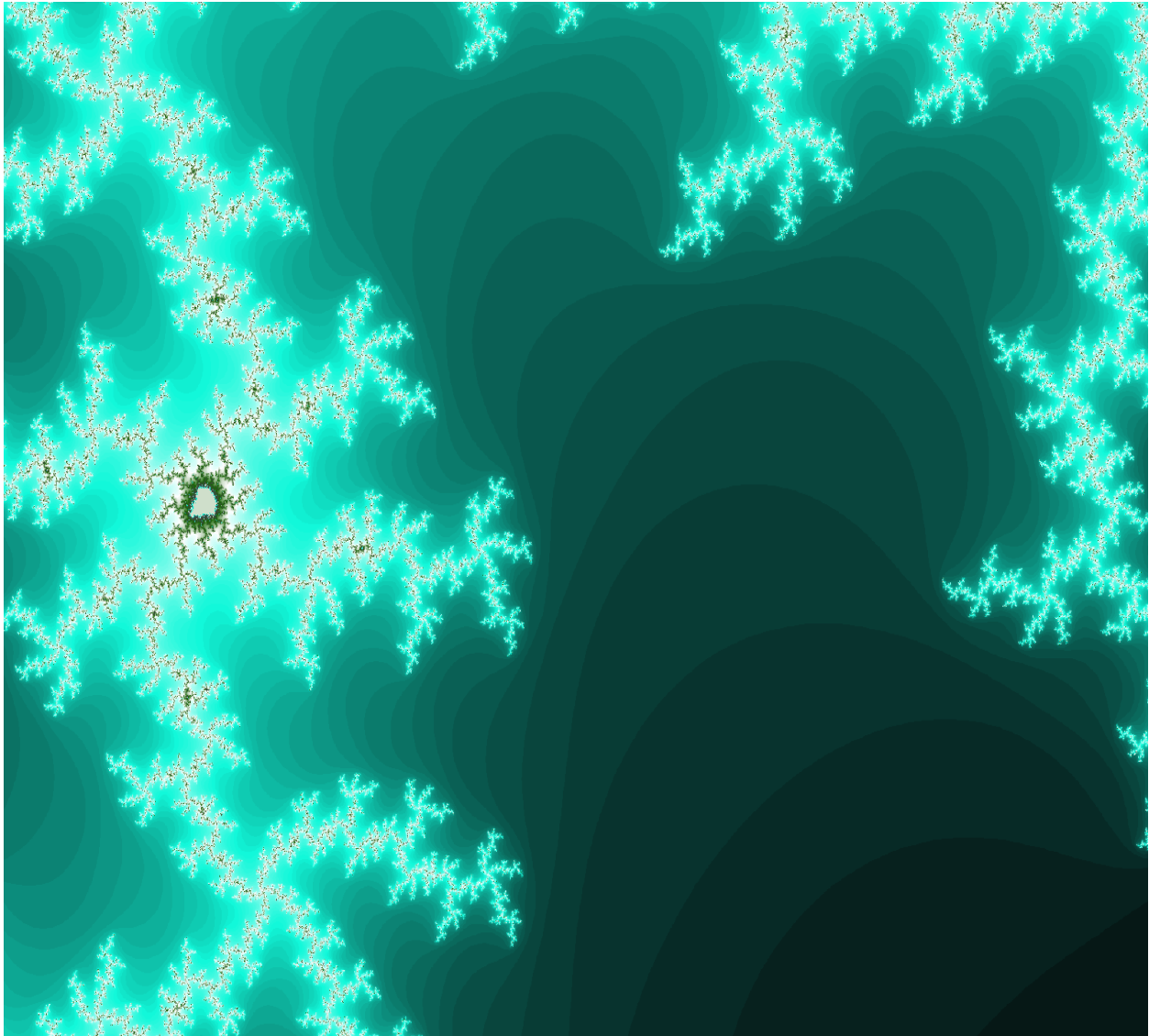


Enrollment Snapshot of Radiography, Radiation Therapy and Nuclear Medicine Technology Programs – 2015

December 2015



©2015 ASRT. All rights reserved.
Reproduction in any form is forbidden without written permission from publisher



American Society of Radiologic Technologists

Table of Contents

Executive Summary 3

Demographic Analysis..... 3

Credit Hours, Accreditation and the State of Education..... 3

Enrollment Analysis..... 4

2015 Student Capacity 4

Near-term Changes 4

Program Outcomes 4

Comparing Canadian and U.S. Programs 5

Glossary..... 5

Demographics 6

Indicate your program type. 6

What is your primary place of employment? 6

What is the terminal degree earned by the graduates in your program?..... 7

In what country is your program located?..... 7

If you chose the United States in the question above, please indicate in which region your program is located. 8

Credit Hours, Accreditation and the State of Education 9

Does your state mandate a limit on the maximum number of credits required for a degree in your program?..... 9

If your state mandates a maximum number of credits for a degree in your program, what is the limit? 9

What type of credit system do you use in your program? 10

What is the level of educational accreditation in your program? 10

If you offer an Associate degree, how many credits are required for students to graduate from that program?..... 11

How many hours of clinical time are required for each clinical credit? 12

For each disciplines below, select what you believe should be the minimum educational requirement. 12

2015 Enrollment Analysis..... 13

Mean number of students entering by program and institution type. 13

Is your program currently at full enrollment? 14

If you are not at full enrollment, how many additional students could be accommodated by your program?..... 16

How many qualified students did you turn away this fall? 16

What was the attrition rate for the class of 2015?	16
What percentage of students passed the credentialing exam on the first try?	16
Do you plan any changes related to enrollment?	16
How viable is your program over the next few years?	16
Longitudinal Enrollment Trends	17
Radiography	17
Estimated total students enrolled for all radiography programs	17
Radiation Therapy	18
Estimated total students enrolled for all radiation therapy programs	18
Nuclear Medicine Technology	19
Estimated total students enrolled for all nuclear medicine programs	19
ARRT-Recognized Programs	20
2015 Comparison of U.S. and Canadian Programs	21
Radiography	21
Radiation Therapy	21
Nuclear Medicine Technology	21
Job Placement of Graduates	22
What percentage of students were able to find employment in their discipline within six months after graduation?	22
For those students who haven't been able to find employment after graduation, what do you believe is the primary reason?	23
Appendix A. Survey Instruments and Invitation Letter (Please contact the ASRT for a copy.)	
Appendix B. Verbatim responses (Please contact the ASRT for a copy.)	

Executive Summary

In September of 2015, an invitation to complete an online questionnaire was sent via e-mail to each of the 971 radiography, radiation therapy, and nuclear medicine technology programs listed by the American Registry of Radiologic Technologists (ARRT).¹ At the close of the survey on October 26, 2015, a total of 521 responses had been received, an overall response rate of 53.7%.

	Return	Population	Percent Sampled	Margin of Error at the 95% Level
R	399	736	54.2%	±3.3%
T	56	113	49.6%	±9.3%
NMT	62	122	50.8%	±8.8%
Overall	521	971	53.7%	±2.9%

This report summarizes findings about enrollment in ARRT-recognized radiologic sciences programs based on responses from program directors.

Demographic Analysis

- Respondents were most likely to work at two-year institutions: 44.4% of respondents characterized their program as a community college or two-year institution; 23.3% were associated with a university; 21.3% work at a medical center-based program; 6.9% work at technical colleges; 2.7% work at for-profit schools, and the remaining 1.3% work at some other type of institution.
- The vast majority of programs responding to the survey were radiography programs (76.6%); of the remaining respondents, 11.9% were nuclear medicine programs, 10.7% were radiation therapy programs, and 0.8% were other types of imaging programs.
- The terminal degree granted by programs responding to the survey was most likely to be an associate degree (60.7%); 19.7% grant a bachelor's degree, and another 19.7% grant some other type of terminal degree.
- The vast majority of programs surveyed (96.3%) are located in the United States; 2.5% are in Canada, 0.8% are in Australia, and the remaining 0.4% are elsewhere.
 - Among those programs located in the U.S., the regions with the highest proportion of programs are the East North Central region, with 20.1% of programs responding to the survey, and the South Atlantic region, which accounted for 19.3% of respondents. The regions with the fewest programs were the Mountain region, accounting for 6.0% of respondents, and New England, accounting for 5.6% of the responding programs.

Credit Hours, Accreditation and the State of Education

Respondents were asked several questions about the number of credits needed to graduate from their program and their institution's accreditation.

- Asked about the level of institutional accreditation in their program, 74.2% of respondents said they have both programmatic and institutional accreditation, 17.6% said they had only programmatic accreditation, 7.2% said they had only institutional accreditation and the remaining 1.0% cited an "other" accreditation arrangement.
- The majority of programs responding to the survey (86.0%) use semester hours for their credit system; 8.1% use quarter hours and the remaining 5.9% use another system.
- Asked whether their state mandates a limit on the maximum number of credit hours allowable for a degree in their program, 37.0% of respondents said yes, 30.7% said no and the remaining 32.3% were unsure.
 - Among those program directors who answered yes, the average maximum allowable number of credits was 86.5 for radiography, 76.2 for radiation therapy, and 67.9 for nuclear medicine.
- The average radiography program responding to the survey requires 59.8 didactic credits, 31.0 clinical credits, and a total of 89.1 credits overall in order to graduate.
- The average radiation therapy program responding to the survey requires 62.1 didactic credits, 23.4 clinical credits, and a total of 83.4 credits overall in order to graduate.
- The average nuclear medicine program responding to the survey requires 63.6 didactic credits, 17.4 clinical credits, and a total of 79.8 credits overall in order to graduate.
- Asked how many hours of clinical time they require for each clinical credit, the average respondent indicated that 59.6 hours of clinical time were needed for each clinical credit.
- Respondents were also asked about what they believe the minimal education requirement should be for each of the three disciplines represented on the survey. There were statistically significant differences between groups.
 - For radiography, 72.2% believe an associate degree is an appropriate minimum requirement; 27.8% prefer a bachelor's degree.
 - For radiation therapy, 33.0% believe that a bachelor's degree should be the minimum requirement, 63.6% believe an associate degree is appropriate, and the remaining 3.4% think that therapy should require a master's degree.
 - For nuclear medicine, 39.4% believe that a bachelor's degree should be the minimum requirement, 59.5% believe an associate degree is appropriate, and the remaining 1.1% think that nuclear medicine should require a master's degree.

¹ American Registry of Radiologic Technologists. ARRT-recognized educational programs. www.art.org/nd/listOfSchools.ndm/listSchools&iframe=yes. Accessed Aug 2015.

Enrollment Analysis

- Based on the survey response, an average of 20.7 students entered each radiography program in 2015. This represents a slight increase of 0.1 students per program from the previous year; average enrollment in 2014 was 20.6 students. This produces an overall estimate of 15,228 students entering ARRT certified radiography programs in 2015, up from 15,211 in 2014.
- On average, 13.9 students entered each radiation therapy program in 2015. This represents an increase of 0.7 students per program from 2014 when, on average, 13.2 students enrolled in each radiation therapy program. This produces an overall estimate of 1,572 students enrolling in ARRT-certified radiation therapy programs in 2015, up from 1,544 in 2014.
- An average of 10.5 students entered each nuclear medicine technology program in 2015. This represents a noticeable increase of 2.0 students per program from 2014 when, on average, 8.5 students enrolled in each nuclear medicine program. Overall, this produces an estimate of 1,276 students enrolling in nuclear medicine programs in 2015, up from 1,061 in 2014.

2015 Student Capacity

- Asked whether their program is currently at full enrollment, 50.1% of radiography programs, 44.6% of radiation therapy programs, and 31.1% of nuclear medicine programs said that they are currently at capacity. There were statistically significant differences between groups.
- Programs not at full enrollment were asked how many additional students their program could accommodate. On average, radiography programs said they could accommodate an additional 8.7 students, radiation therapy programs said they could accommodate an additional 7.1 students and nuclear medicine programs said they could accommodate an additional 6.0 students.
 - This produces an estimate of 3,195 additional students across all radiography programs, 444 additional students across all radiation therapy programs, and 504 additional students across all nuclear medicine programs.
- The mean number of qualified students turned away by each radiography program was 27.7; each radiation therapy program turned away an average of 14.8 qualified students and each nuclear medicine program turned away an average of 4.5 qualified students.
 - This produces an estimate of 10,214 qualified students turned away in radiography, 746 turned away by therapy programs, and 171 turned away by nuclear medicine programs.

Near-term Changes

Most of the programs surveyed plan to maintain their current levels of enrollment; 83.9% of programs across disciplines plan to keep their enrollment at the same level; 11.4% of programs plan to increase enrollment and the remaining 4.7% plan to decrease their enrollment.

- In radiography, 83.8% of programs plan to maintain current enrollment; 11.4% plan to increase their enrollment and the remaining 4.8% of programs plan to decrease their enrollment.
- In radiation therapy, 87.5% of programs plan to keep their current enrollment level; 10.7% are planning an increase and 1.8% plan to decrease enrollment.
- In nuclear medicine, 81.7% of programs plan to leave their enrollment unchanged; 11.7% are planning an increase and 6.7% plan to decrease their enrollment.

The majority of programs across disciplines (79.1%) will definitely continue to operate; 19.0% will most likely continue operations, 1.7% will definitely close and the remaining 0.2% will most likely close. There were significant differences between groups.

- In radiography, 81.8% of programs said they would definitely continue to operate; 16.9% will most likely continue operations, 1.0% will definitely be closing and the remaining 0.3% will likely close.
- In radiation therapy, 76.8% of programs will definitely continue to operate; 21.4% of programs will most likely continue operations and 1.8% will definitely close.
- In nuclear medicine, 62.3% of programs will definitely continue to operate; 31.1% will likely continue to operate and 6.6% will definitely close.

Program Outcomes

Asked about the attrition rate at their program, respondents indicated that, on average:

- 36.7% of students in radiography programs failed to complete their course of study.
- 24.6% of students in radiation therapy programs failed to complete their course of study.
- 17.3% of students in nuclear medicine programs failed to finish their course of study.

For those students who successfully completed the program, respondents were asked what percentage of graduates passed the credentialing exam on their first attempt:

- On average, 92.9% of radiography graduates passed the exam on their first attempt.
- On average, 92.2% of radiation therapy graduates passed the exam on their first attempt.
- On average, 94.0% of nuclear medicine graduates passed the exam on their first attempt.

Asked whether graduates of their program were able to find employment in their primary discipline within 6 months of graduating, respondents said that:

- From the class of 2014, 93.0% of graduates from radiography programs, 90.6% from radiation therapy programs and 82.1% of graduates of nuclear medicine programs were able to find employment in their field within 6 months.

- These placement rates represent an increase of 7.9% from 85.1% the previous year in radiography, an increase of 5.0% from 85.6% the previous year in radiation therapy and a decrease of 1.6% from 83.7% the previous year in nuclear medicine.
- Respondents had a range of opinions as to why those graduates unable to find work had been unable to do so. 24.8% believe that there are too many graduates in relation to open positions, 24.6% answered “other”, 20.1% blame facilities cutting back on positions, 16.5% believe that it is because managers are not filling open positions, 13.8% think that the current workforce is delaying retirement and 0.2% believe that it is due to hospital closures.

Comparing Canadian and U.S. programs

- In radiography, the mean entering class size was larger in Canada than in the United States. On average, 36.6 students entered Canadian program, compared with an average of 20.0 students for each program in the United States.
- 24.8 students entered each Canadian radiation therapy program, compared with 12.1 entering each therapy program in the United States.
- 23.0 students entered each Canadian nuclear medicine program, compared with 9.4 entering each nuclear medicine program in the United States.
- Based on the survey responses, the calculated mean entering class size and the total number of programs, the estimated total enrollment for each discipline is:
 - Radiography: 14,142 in the U.S. and 768 in Canada.
 - Radiation Therapy: 1,127 in the U.S. and 322 in Canada.

- Nuclear Medicine: 1,105 in the U.S. and 115 in Canada.
- Canadian radiography programs were noticeably more likely to be at full enrollment than their U.S. counterparts: in radiography, 85.7% of Canadian radiography programs were at full enrollment, compared with 49.1% of U.S. programs. In radiation therapy, 80.0% of programs in Canada were at full enrollment compared with 40.0% in the United States. In nuclear medicine, 100.0% of Canadian programs were at capacity (note that only a single Canadian program in this area responded to the survey), compared with 27.6% of U.S. programs.

Glossary

The following statistical results are displayed using a common set of acronyms and symbols for brevity. The symbols and acronyms used are listed here for reference.

N

Number of responses.

Valid Percent

Percentage of total responses.

Population

The total number of programs.

SD

Standard Deviation.

χ^2

Chi-squared, from Pearson’s Chi-Squared Test for significance.

p

Probability, as a threshold for statistical significance.

F

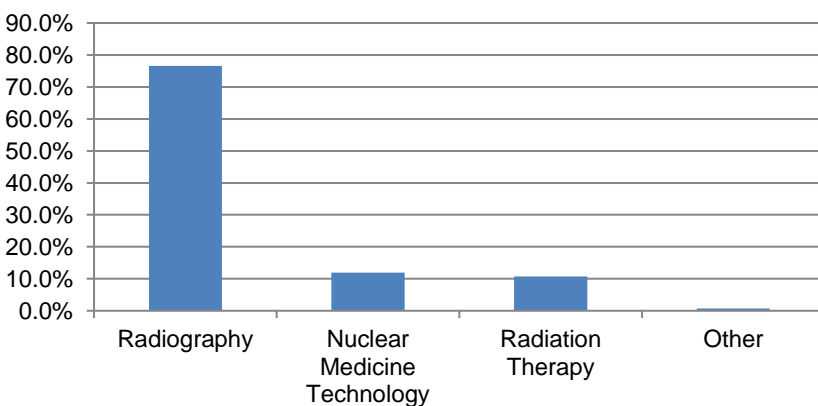
F-statistic in an analysis of variance.

Demographics

Indicate your program type.

	N	Valid Percent	Population	Sample Return as Percent of Population
Radiography	399	76.6%	736	54.2%
Nuclear Medicine Technology	62	11.9%	122	50.8%
Radiation Therapy	56	10.7%	113	49.6%
Other	4	0.8%	n/a	n/a
Total	521	100.0%	971	53.7%

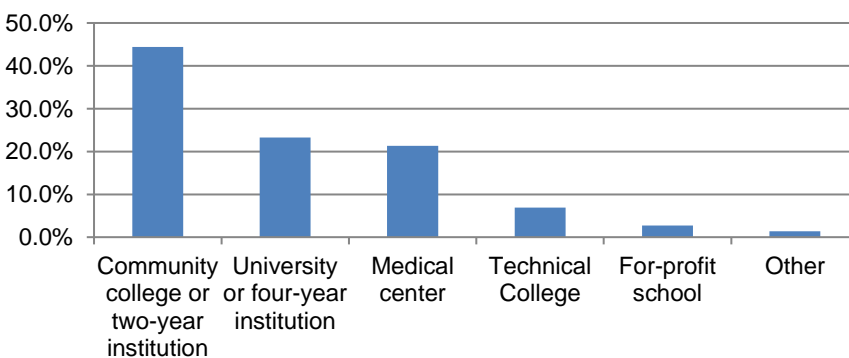
Indicate your program type.



What is your primary place of employment?

	N	Valid Percent
Community college or two-year institution	231	44.4%
University or four-year institution	121	23.3%
Medical center	111	21.3%
Technical College	36	6.9%
For-profit school	14	2.7%
Other	7	1.3%
Total	520	100.0%

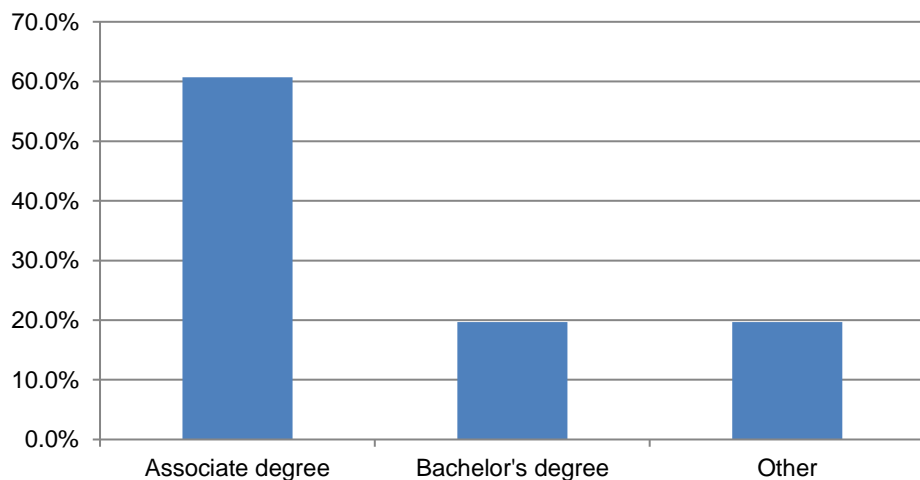
What is your primary place of employment?



What is the terminal degree earned by the graduates in your program?

	N	Valid Percent
Associate degree	315	60.7%
Bachelor's degree	102	19.7%
Other	102	19.7%
Total	519	100.0%

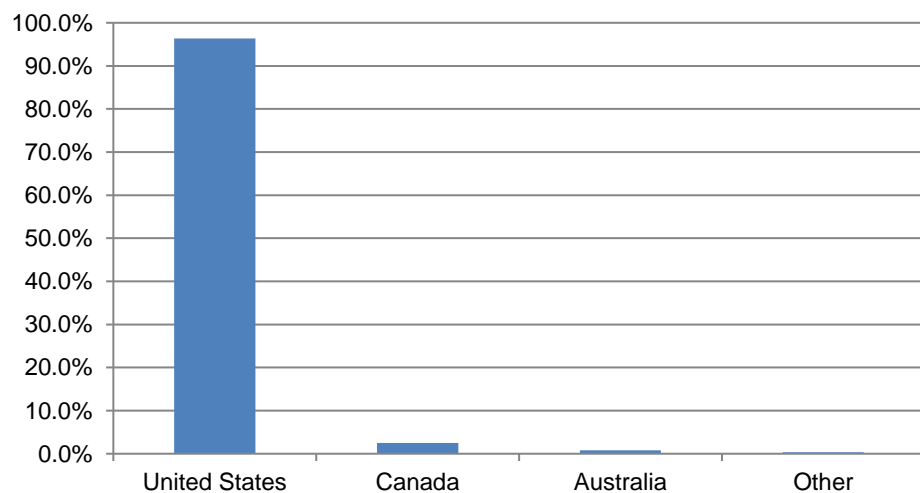
What is the terminal degree earned by the graduates in your program?



In what country is your program located?

	N	Valid Percent
United States	500	96.3%
Canada	13	2.5%
Australia	4	0.8%
Other	2	0.4%
Total	519	100.0%

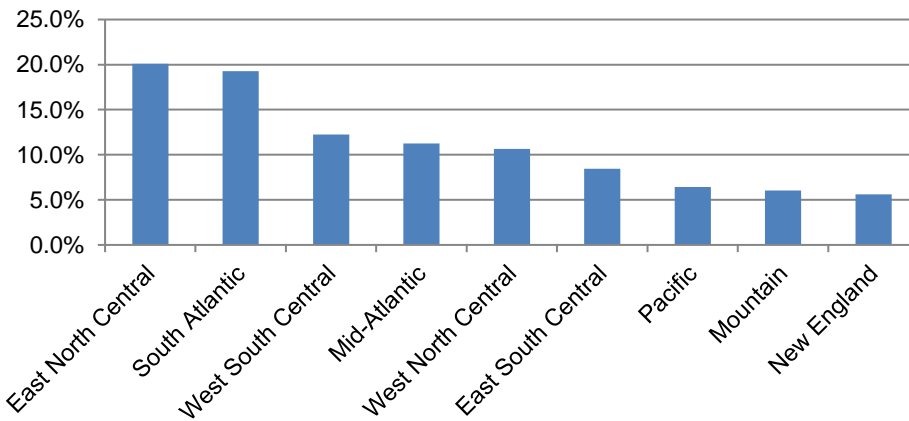
In what country is your program located?



If you chose the United States in the question above, please indicate in which region your program is located.

	N	Valid Percent
East North Central (WI, MI, IL, IN, OH)	100	20.1%
South Atlantic (DE, MD, DC, VA, WV, NC, SC, GA, FL, PR)	96	19.3%
West South Central (OK, TX, AR, LA)	61	12.2%
Mid-Atlantic (NY, PA, NJ)	56	11.2%
West North Central (ND, SD, NE, KS, MN, IA, MO)	53	10.6%
East South Central (KY, TN, MS, AL)	42	8.4%
Pacific (AK, WA, OR, CA, HI)	32	6.4%
Mountain (ID, MT, WY, NV, UT, CO, AZ, NM)	30	6.0%
New England (ME, NH, VT, MA, CT)	28	5.6%
Total	498	100.0%

If you chose the United States in the question above, please indicate in which region your program is located.

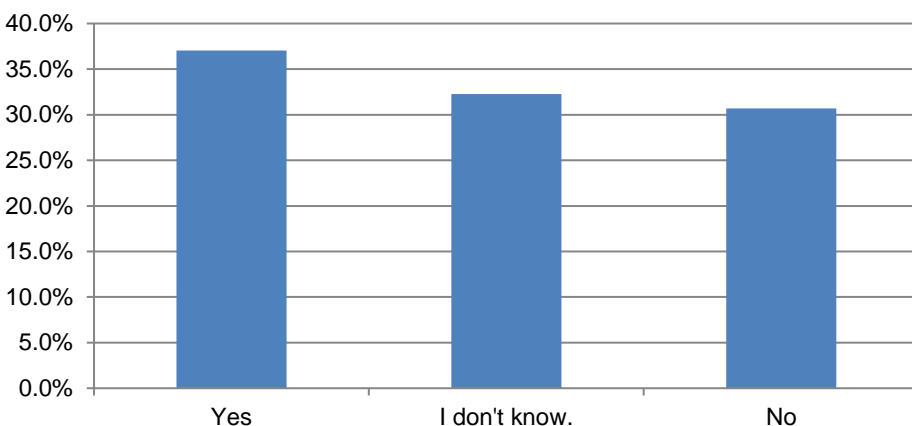


Credit Hours, Accreditation and the State of Education

Does your state mandate a limit on the maximum number of credits required for a degree in your program?

	N	Valid Percent
Yes	187	37.0%
I don't know.	163	32.3%
No	155	30.7%
Total	505	100.0%

Does your state mandate a limit on the maximum number of credits required for a degree in your program?

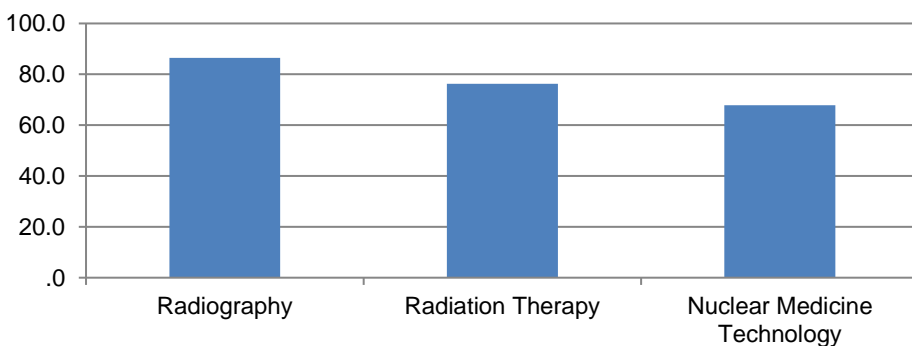


If your state mandates a maximum number of credits for a degree in your program, what is the limit?

	Mean	N	SD
Radiography	86.5	141	146.4
Radiation Therapy	76.3	19	31.2
Nuclear Medicine Technology	67.9	18	25.9
Total	83.5	178	131.0

There were no statistically significant differences in the means between groups.

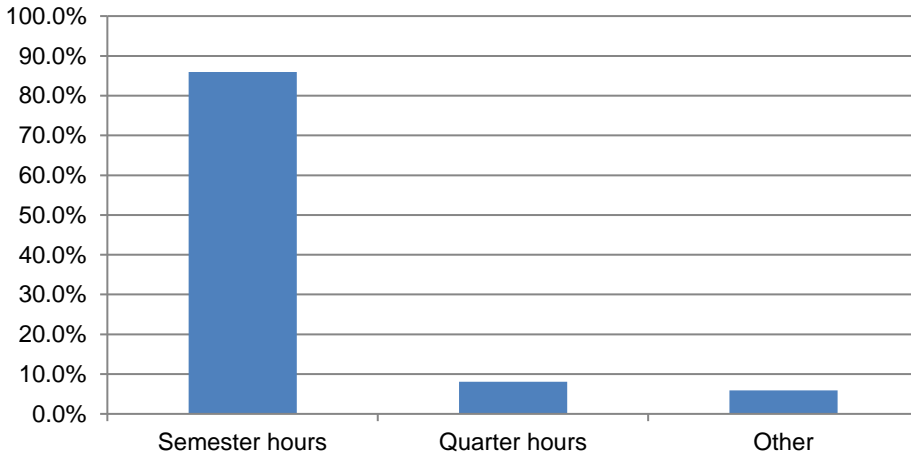
If your state mandates a maximum number of credits for a degree in your program, what is the limit?



What type of credit system do you use in your program?

	N	Valid Percent
Semester hours	435	86.0%
Quarter hours	41	8.1%
Other	30	5.9%
Total	506	100.0%

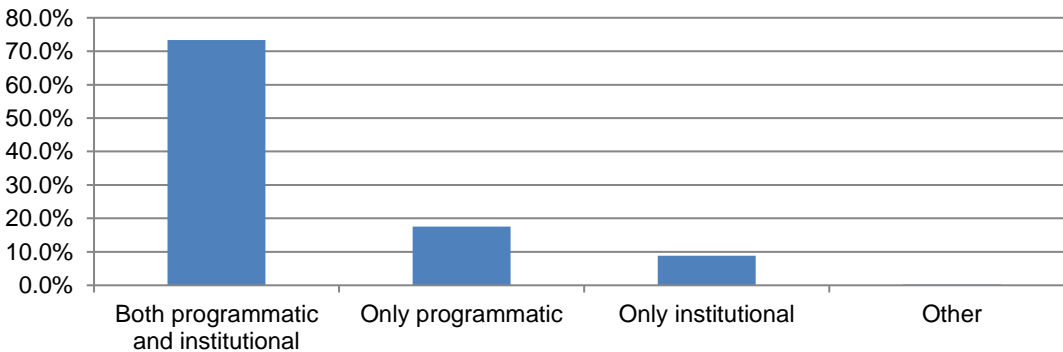
What type of credit system do you use in your program?



What is the level of educational accreditation in your program?

	N	Valid Percent
Both programmatic and institutional	339	73.4%
Only programmatic	81	17.5%
Only institutional	41	8.9%
Other	1	0.2%
Total	462	100.0%

What is the level of educational accreditation in your program?

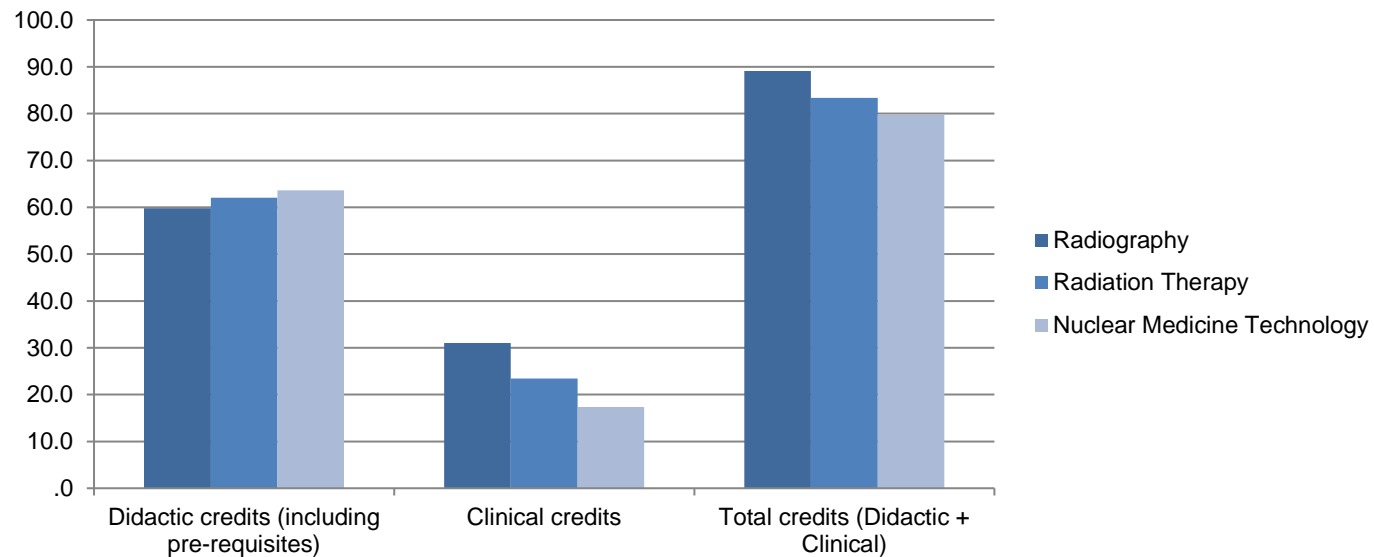


If you offer an Associate degree, how many credits are required for students to graduate from that program?

	Radiography			Radiation Therapy			Nuclear Medicine Technology			Overall		
	Mean	N	SD	Mean	N	SD	Mean	N	SD	Mean	N	SD
Didactic credits (including pre-requisites)	59.8	257	50.1	62.1	18	23.8	63.6	18	16.4	59.9	295	47.3
Clinical credits	31.0	18	23.8	23.4	18	16.3	17.4	18	12.9	29.6	296	118.3
Total credits (Didactic + Clinical)	89.1	283	166.9	83.4	20	28.4	79.8	16	25.3	88.1	320	157.2

There were no statistically significant differences in the mean total credits between the groups.

If you offer an Associate degree, how many credits are required for students to graduate from that program?



How many hours of clinical time are required for each clinical credit?

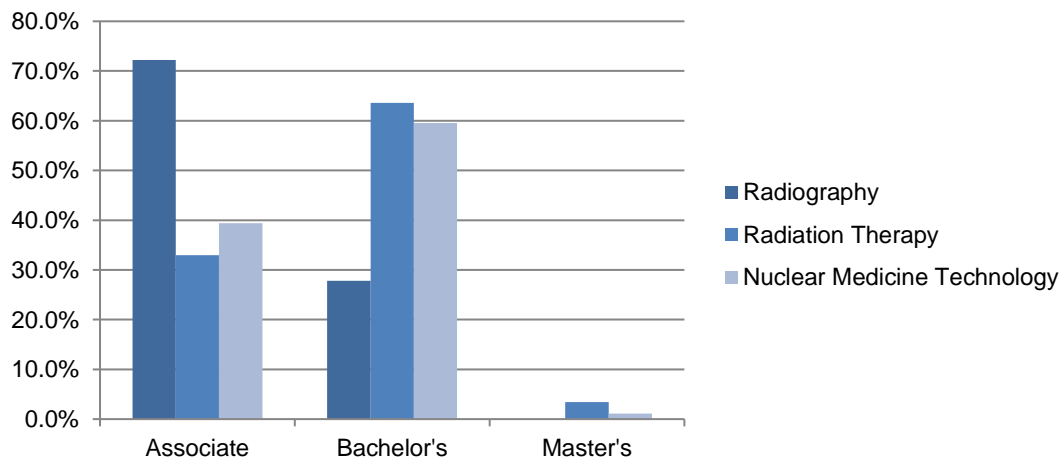
N	402
Mean	59.6
SD	51.3
Median	50.2

For each discipline below, select what you believe should be the minimum educational requirement.

		Radiography	Radiation Therapy	Nuclear Medicine Technology	Overall
Associate	N	361	153	180	694
	%	72.2%	33.0%	39.4%	48.8%
Bachelor's	N	139	295	272	706
	%	27.8%	63.6%	59.5%	49.7%
Master's	N	0	16	5	21
	%	0.0%	3.4%	1.1%	1.5%
Total	N	500	464	457	1421
	%	100.0%	100.0%	100.0%	100.0%

The percentage differences were statistically significant, $\chi^2(4, n = 1421) = 183.0, p < .001$.

For each discipline below, select what you believe should be the minimum educational requirement.



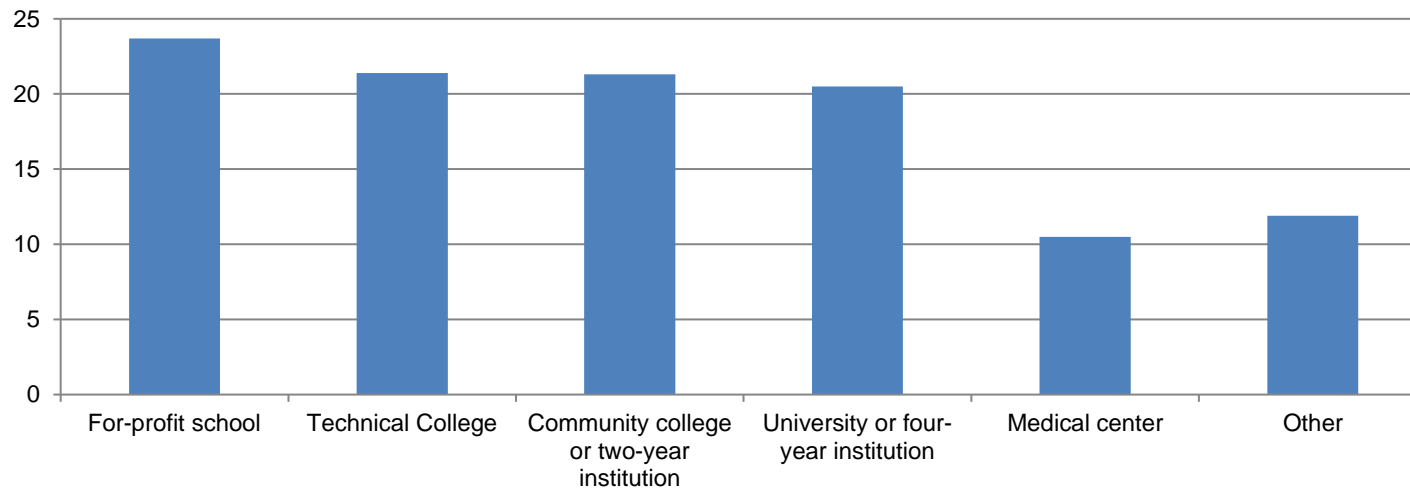
2015 Enrollment Analysis

Mean number of students entering by program and institution type.

	Radiography			Radiation Therapy			Nuclear Medicine Technology			Overall		
	Mean	N	SD	Mean	N	SD	Mean	N	SD	Mean	N	SD
For-profit school	24.7	13	19.3	.	.	.	11.0	1	.	23.7	14	18.9
Technical College	20.8	33	16.3	37.5	2	19.1	10.0	1	.	21.4	36	16.5
Community college or two-year institution	22.9	194	10.7	13.8	17	8.4	12.9	18	6.4	21.3	231	10.8
University or four-year institution	25.5	67	18.1	14.9	28	11.0	12.1	24	12.0	20.5	121	16.9
Medical center	11.9	86	6.7	6.0	9	5.1	5.6	16	5.1	10.5	111	6.8
Other	13.0	6	4.0				5.0	1	.	11.9	7	4.7
Total	20.7	399	13.3	13.9	56	11.0	10.5	61	9.1	18.8	520	13.3

The overall mean number of students entering in medical centers was statistically different than the other institution types, $F(5,514) = 13.11, p < .001$.

Mean number of students entering by program and institution type. - Overall

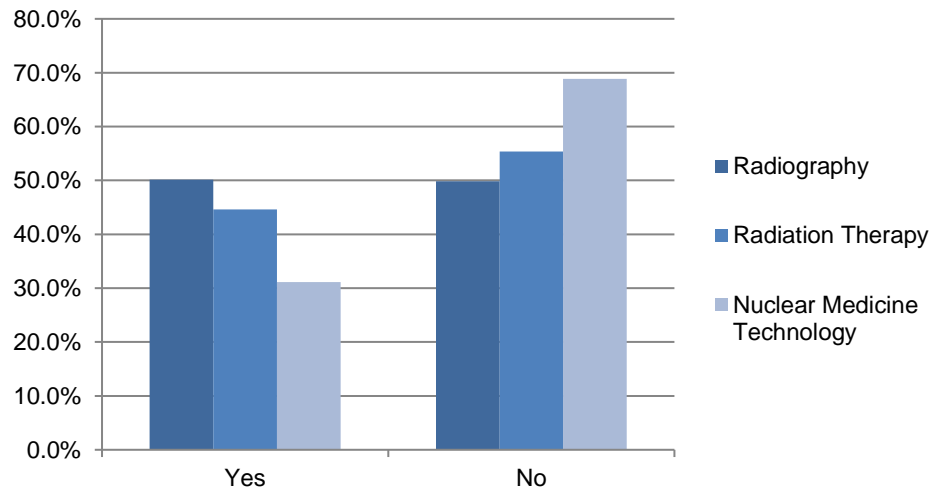


Is your program currently at full enrollment?

		Radiography	Radiation Therapy	Nuclear Medicine Technology	Overall
Yes	N	199	25	19	243
	%	50.1%	44.6%	31.1%	47.3%
No	N	198	31	42	271
	%	49.9%	55.4%	68.9%	52.7%
Total	N	397	56	61	514
	%	100.0%	100.0%	100.0%	100.0%

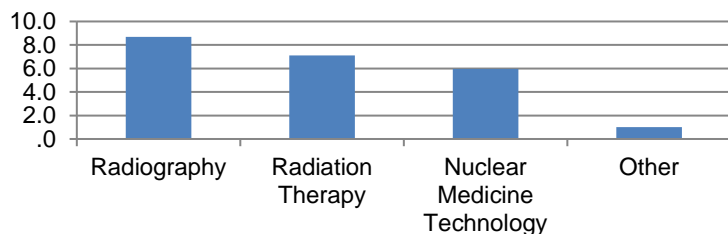
The percentage differences were statistically significant, $\chi^2(2, n = 514) = 7.815, p = .020$.

Is your program currently at full enrollment?

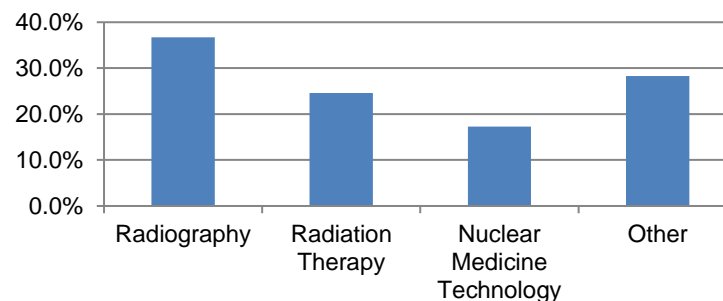


	Radiography			Radiation Therapy			Nuclear Medicine Technology			Overall		
	Mean	N	SD	Mean	N	SD	Mean	N	SD	Mean	N	SD
If you are not at full enrollment, how many additional students could be accommodated by your program?	8.7	203	10.7	7.1	33	8.3	6.0	40	4.8	8.1	278	9.8
How many qualified students did you turn away this fall?	27.7	375	42.1	14.8	53	19.8	4.5	59	7.6	23.4	491	38.4
Attrition rate for the class of 2015	36.7%	356	31.9%	24.6%	47	31.6%	17.3%	53	25.8%	33.1%	460	31.9%
What percentage of students passed the credentialing exam on the first try?	92.9%	349	13.1%	92.2%	44	15.1%	94.0%	54	18.8%	92.9%	451	14.1%

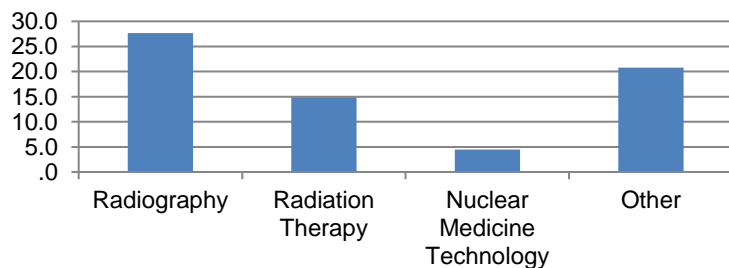
If you are not at full enrollment, how many additional students could be accommodated by your program?



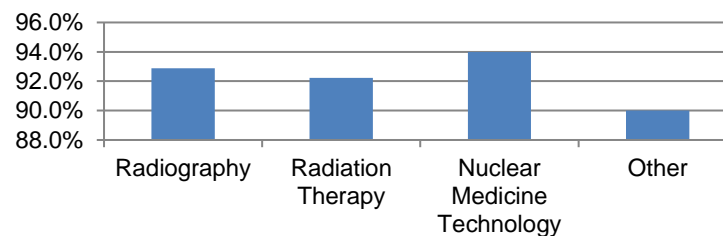
Attrition rate for the class of 2015



How many qualified students did you turn away this fall?



What percentage of students from the class of 2015 passed the credentialing exam on the first try?

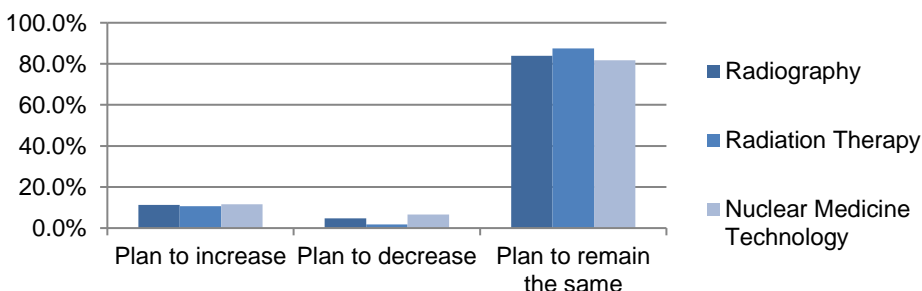


Do you plan any changes related to enrollment?

		Radiography	Radiation Therapy	Nuclear Medicine Technology	Overall
Plan to increase	N	45	6	7	58
	%	11.4%	10.7%	11.7%	11.2%
Plan to decrease	N	19	1	4	24
	%	4.8%	1.8%	6.7%	4.7%
Plan to remain the same	N	332	49	49	430
	%	83.8%	87.5%	81.7%	83.3%
Total	N	396	56	60	512
	%	100.0%	100.0%	100.0%	100.0%

There were no statistically significant differences between groups.

Do you plan any changes related to enrollment?

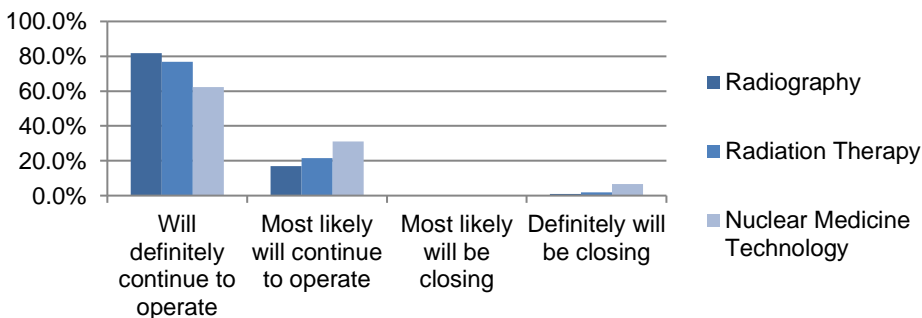


How viable is your program over the next few years?

		Radiography	Radiation Therapy	Nuclear Medicine Technology	Overall
Will definitely continue to operate	N	324	43	38	405
	%	81.8%	76.8%	62.3%	78.9%
Most likely will continue to operate	N	67	12	19	98
	%	16.9%	21.4%	31.1%	19.1%
Most likely will be closing	N	1	0	0	1
	%	0.3%	0.0%	0.0%	0.2%
Definitely will be closing	N	4	1	4	9
	%	1.0%	1.8%	6.6%	1.8%
Total	N	396	56	61	513
	%	100.0%	100.0%	100.0%	100.0%

The percentage differences were statistically significant, $\chi^2(6, n = 513) = 17.936, p = .006$.

How viable is your program over the next few years?

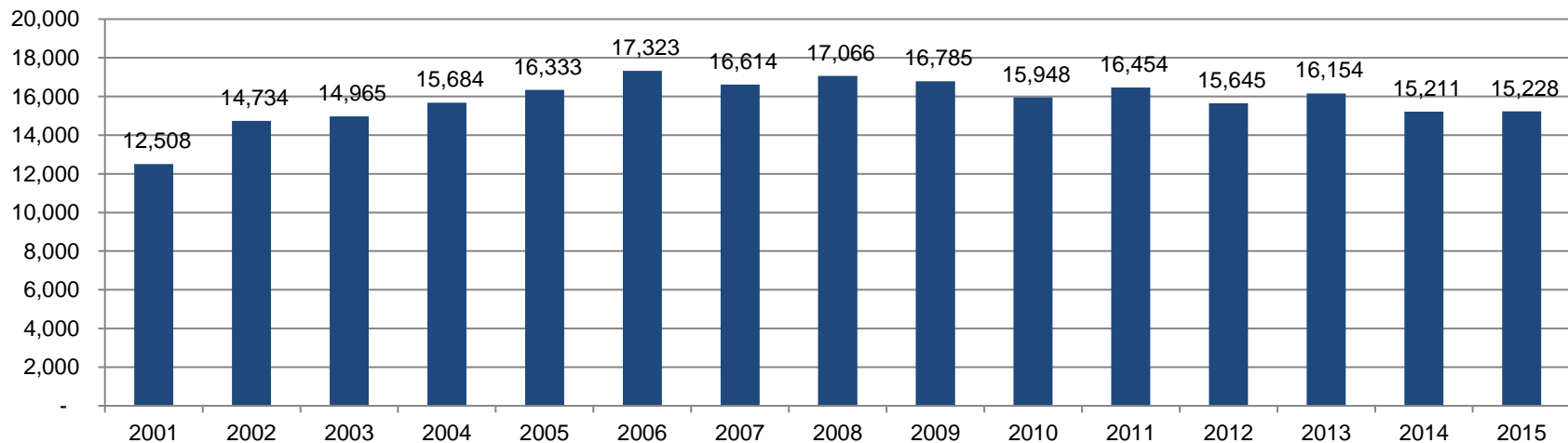


Longitudinal Enrollment Trends

Radiography

Year	ARRT-recognized programs	Percent of programs responding to survey with enrollment data	Mean number of students entering classroom	Estimated total students enrolled for all programs	Mean attrition rate	Percent of programs not at full capacity	Mean additional students per program for those not at full capacity	Estimated total additional students for programs not at full capacity	Mean qualified students per program turned away	Estimated total qualified students turned away
2001	590	75.4%	21.2	12,529	21.6%	50.2%	.	.	.	.
2002	631	67.5%	23.4	14,734	23.6%	30.9%	8.7	1,688	31.6	13,766
2003	639	71.4%	23.4	14,965	21.6%	21.2%	5.8	741	46.8	23,550
2004	684	68.7%	22.9	15,683	20.5%	21.7%	7.5	1,106	55.1	29,531
2005	715	65.5%	22.8	16,475	18.1%	20.9%	7.4	1,104	50.9	27,131
2006	723	73.7%	24.0	17,323	18.4%	22.6%	7.0	1,142	59.2	33,148
2007	729	67.9%	22.8	16,612	17.8%	30.2%	7.1	1,558	56.8	28,556
2008	742	70.1%	23.0	17,050	21.1%	33.3%	8.4	2,073	50.4	24,914
2009	746	60.1%	22.5	16,759	20.8%	40.0%	3.7	1,088	43.4	19,386
2010	751	64.8%	21.2	15,948	23.3%	43.7%	7.6	2,490	39.1	16,528
2011	751	57.7%	21.9	16,454	25.8%	46.2%	7.6	2,637	37.1	14,978
2012	750	62.8%	20.9	15,645	29.1%	44.9%	8.3	2,785	39.5	15,950
2013	741	50.5%	21.8	16,154	27.9%	46.5%	7.8	2,688	36.3	14,391
2014	739	49.1%	20.6	15,211	31.2%	50.3%	7.2	2,682	34.1	12,522
2015	736	54.2%	20.7	15,228	36.7%	49.9%	8.7	3,195	27.7	10,214

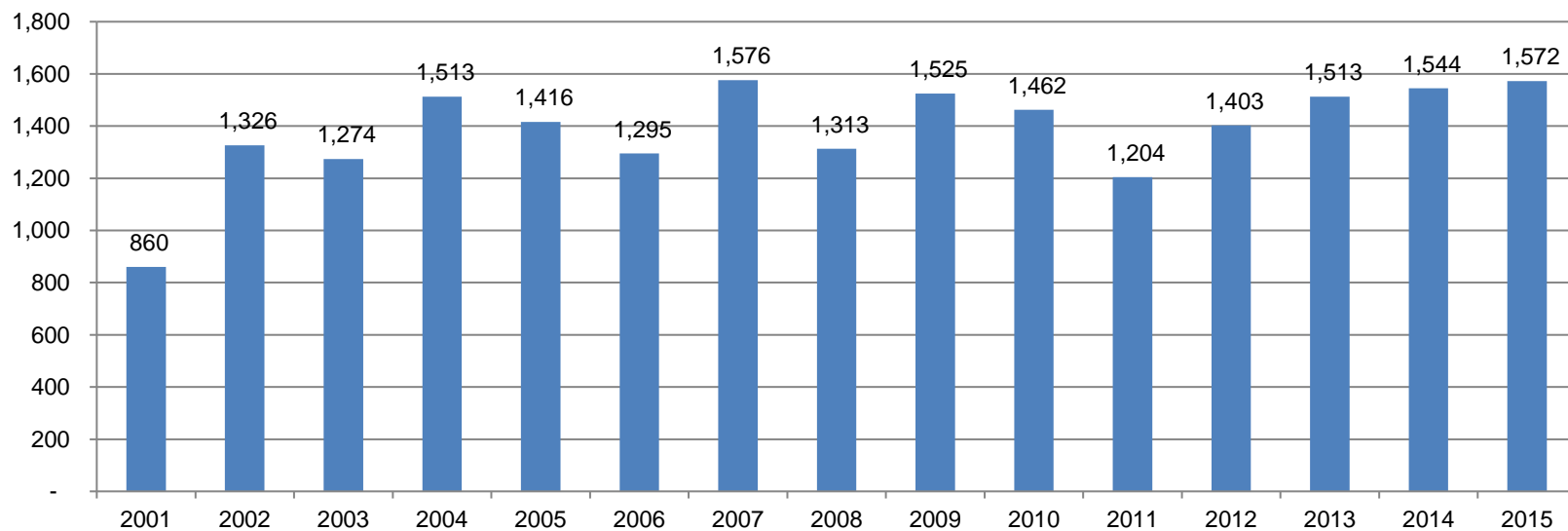
Estimated total students enrolled for all radiography programs



Radiation Therapy

Year	ARRT-recognized programs	Percent of programs responding to survey with enrollment data	Mean number of students entering classroom	Estimated total students enrolled for all programs	Mean attrition rate	Percent of programs not at full capacity	Mean additional students per program for those not at full capacity	Estimated total additional students for programs not at full capacity	Mean qualified students per program turned away	Estimated total qualified students turned away
2001	86	60.5%	10.0	860	18.1%	44.4%	.	.	.	.
2002	95	59.9%	14.0	1,326	11.1%	48.0%	5.7	261	9.1	449
2003	101	57.4%	12.6	1,274	18.0%	44.6%	4.4	200	13.6	758
2004	105	55.2%	14.4	1,513	11.9%	30.5%	12.5	400	13.4	974
2005	113	56.6%	12.5	1,382	16.8%	32.1%	3.4	124	24.5	1,880
2006	118	67.8%	11.0	1,295	16.6%	49.3%	6.4	373	21.6	1,291
2007	122	54.1%	12.9	1,577	15.2%	51.5%	6.3	395	13.3	931
2008	125	49.6%	10.5	1,314	14.4%	58.6%	4.5	330	33.0	1,708
2009	122	49.2%	12.5	1,505	10.9%	55.5%	3.7	243	15.8	869
2010	122	57.4%	12.0	1,462	18.3%	49.3%	7.9	475	18.0	1,112
2011	123	44.1%	9.8	1,204	21.9%	51.9%	6.1	388	14.3	846
2012	122	48.4%	11.5	1,403	18.9%	53.4%	6.9	451	14.4	844
2013	121	55.4%	12.5	1,513	21.8%	57.6%	5.7	397	17.1	877
2014	117	45.3%	13.2	1,544	26.5%	49.1%	6.2	355	15.7	935
2015	113	49.6%	13.9	1,572	24.6%	55.4%	7.1	444	14.8	746

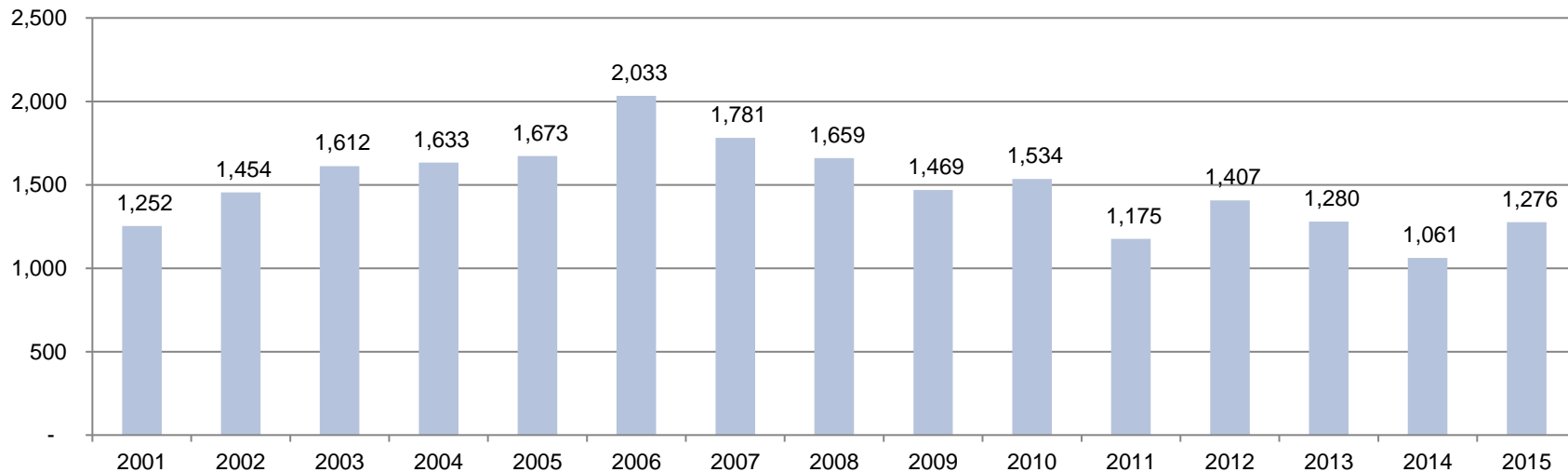
Estimated total students enrolled for all radiation therapy programs



Nuclear Medicine Technology

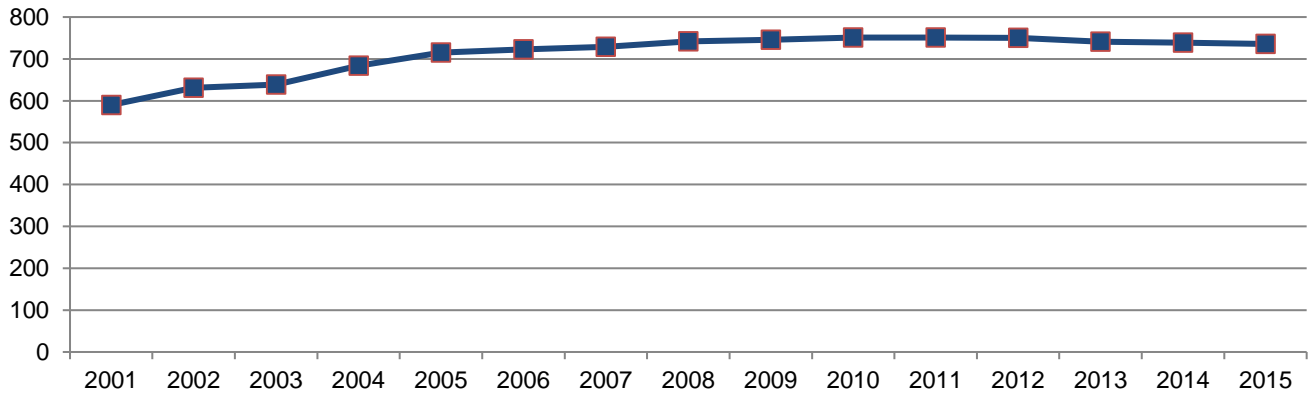
Year	ARRT-recognized programs	Percent of programs responding to survey with enrollment data	Mean number of students entering classroom	Estimated total students enrolled for all programs	Mean attrition rate	Percent of programs not at full capacity	Mean additional students per program for those not at full capacity	Estimated total additional students for programs not at full capacity	Mean qualified students per program turned away	Estimated total qualified students turned away
2001	101	62.4%	12.4	1,252	11.8%	53.2%	.	.	.	.
2002	104	55.8%	14.0	1,454	8.0%	35.7%	6.7	251	19.7	1,381
2003	111	59.5%	14.5	1,612	7.1%	33.3%	2.7	180	32.1	2,375
2004	117	58.1%	14.0	1,633	9.8%	20.9%	3.6	88	24.4	2,258
2005	122	51.6%	13.7	1,698	8.6%	30.6%	5.1	191	32.9	2,786
2006	131	71.8%	15.5	2,033	10.2%	31.8%	5.7	238	30.2	2,697
2007	132	55.3%	13.5	1,781	8.3%	39.7%	6.3	331	24.2	1,916
2008	136	59.5%	12.2	1,660	12.3%	58.4%	10.0	794	18.2	1,032
2009	136	47.5%	10.8	1,482	7.0%	63.0%	4.3	416	9.3	473
2010	136	47.1%	11.3	1,534	12.9%	78.8%	7.0	748	12.9	372
2011	134	45.7%	8.8	1,175	11.3%	82.5%	7.2	796	8.0	187
2012	134	56.7%	10.5	1,407	18.4%	73.0%	8.7	851	6.4	150
2013	128	46.9%	10.0	1,280	23.8%	76.1%	7.9	770	7.8	239
2014	125	42.4%	8.5	1,061	36.7%	79.2%	8.1	802	8.3	216
2015	122	50.8%	10.5	1,276	17.3%	68.9%	6.0	504.3	4.5	171

Estimated total students enrolled for all nuclear medicine programs

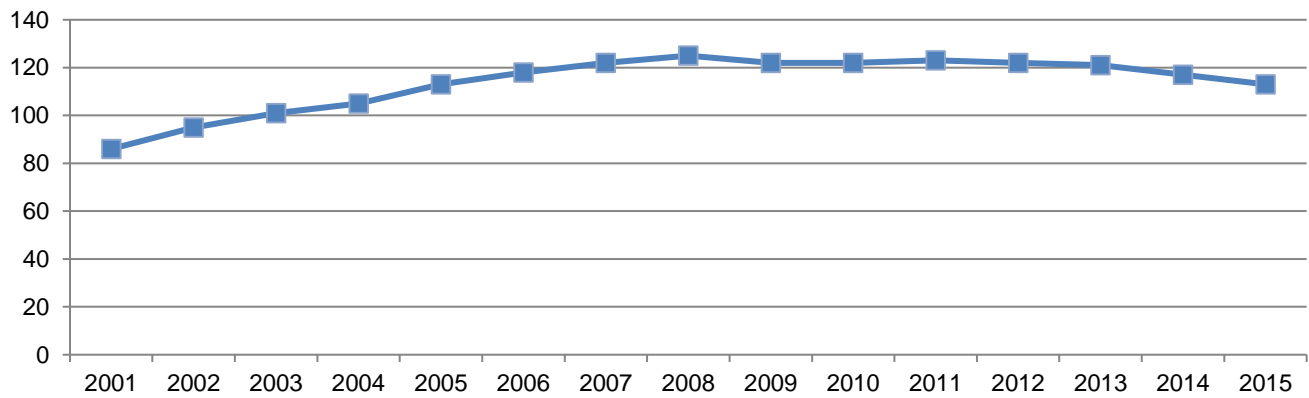


ARRT-Recognized Programs

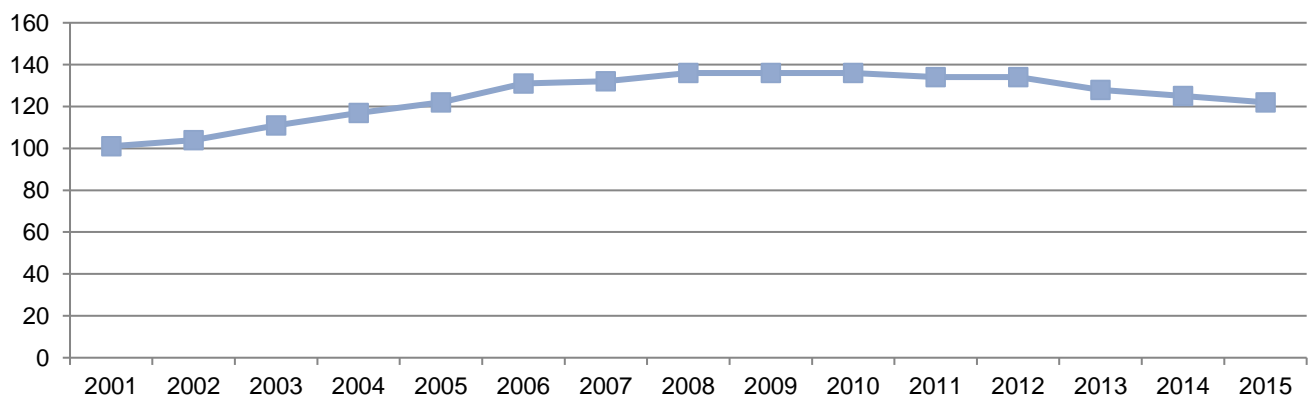
Radiography



Radiation Therapy



Nuclear Medicine Technology



2015 Comparison of U.S. and Canadian Programs

Radiography

Country	ARRT-recognized programs	Percent of programs responding to survey with enrollment data	Mean number of students entering classroom	Estimated total students enrolled for all programs	Mean attrition Rate	Percent of programs not at full capacity	Mean additional students per program for those not at full capacity	Estimated total additional students for programs not at full capacity	Mean qualified students per program turned away	Estimated total qualified students turned away
United States	706	55.0%	20.0	14,142	36.7%	50.9%	8.7	3,134	27.2	9,412
Canada	21	33.3%	36.6	768	35.7%	14.3%	1.0	3	73.0	1,314

Radiation Therapy

Country	ARRT-recognized programs	Percent of programs responding to survey with enrollment data	Mean number of students entering classroom	Estimated total students enrolled for all programs	Mean attrition Rate	Percent of programs not at full capacity	Mean additional students per program for those not at full capacity	Estimated total additional students for programs not at full capacity	Mean qualified students per program turned away	Estimated total qualified students turned away
United States	94	53.2%	12.1	1,137	23.7%	60.0%	6.4	362	15.5	583
Canada	13	38.5%	24.8	322	37.7%	20.0%	29.0	75	10.8	112

Nuclear Medicine Technology

Country	ARRT-recognized programs	Percent of programs responding to survey with enrollment data	Mean number of students entering classroom	Estimated total students enrolled for all programs	Mean attrition Rate	Percent of programs not at full capacity	Mean additional students per program for those not at full capacity	Estimated total additional students for programs not at full capacity	Mean qualified students per program turned away	Estimated total qualified students turned away
United States	117	49.6%	9.4	1,105	17.6%	72.4%	6.0	506.1	4.2	136
Canada	5	20.0%	23.0	115		0.0%	8.7	-	24.0	120

Job Placement of Graduates

What percentage of students were able to find employment in their discipline within six months after graduation?

	New England (ME, NH, VT, MA, CT)	Mid-Atlantic (NY, PA, NJ)	East North Central (WI, MI, IL, IN, OH)	West North Central (ND, SD, NE, KS, MN, IA, MO)	South Atlantic (DE, MD, DC, VA, WV, NC, SC, GA, FL, PR)	East South Central (KY, TN, MS, AL)	West South Central (OK, TX, AR, LA)	Mountain (ID, MT, WY, NV, UT, CO, AZ, NM)	Pacific (AK, WA, OR, CA, HI)	Overall
--	----------------------------------	---------------------------	---	---	---	-------------------------------------	-------------------------------------	---	------------------------------	---------

Radiography

2009	86.2%	80.3%	81.1%	84.1%	82.7%	86.3%	84.5%	79.1%	77.8%	82.2%
2010	82.1%	76.2%	80.8%	82.3%	80.1%	88.5%	85.6%	78.9%	74.2%	80.8%
2011	85.9%	87.0%	87.7%	86.7%	84.0%	90.0%	93.0%	86.8%	81.0%	86.9%
2012	80.3%	84.6%	87.7%	88.7%	86.3%	86.7%	77.8%	82.2%	84.7%	85.3%
2013	76.9%	86.6%	87.2%	87.9%	85.2%	81.9%	80.4%	86.1%	85.2%	85.1%
2014	87.8%	92.9%	92.3%	97.6%	89.7%	94.8%	95.9%	94.4%	90.5%	93.0%

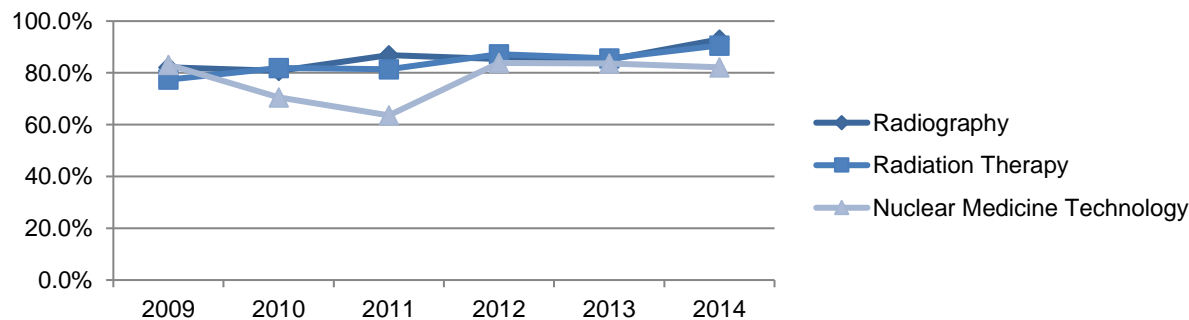
Radiation Therapy

2009	84.2%	83.2%	70.4%	85.3%	70.5%	63.3%	79.8%	.	92.0%	77.4%
2010	74.1%	78.5%	87.7%	79.0%	78.7%	78.3%	89.7%	.	93.3%	81.9%
2011	87.5%	85.0%	77.3%	86.1%	68.6%	82.5%	85.0%	70.0%	96.0%	81.4%
2012	92.5%	88.7%	83.9%	79.6%	94.2%	100.0%	78.8%	97.5%	82.2%	87.2%
2013	85.0%	92.3%	76.8%	87.0%	96.3%	95.0%	65.8%	91.5%	89.7%	85.6%
2014	93.2%	86.0%	87.2%	92.5%	92.6%	93.8%	85.0%	90.0%	97.5%	90.6%

Nuclear Medicine Technology

2009	83.8%	79.4%	76.7%	86.0%	80.0%	91.2%	90.1%	87.3%	83.9%	83.2%
2010	63.8%	61.6%	63.6%	69.6%	72.4%	87.4%	77.0%	81.7%	76.7%	70.6%
2011	48.8%	41.9%	48.9%	86.1%	70.5%	70.5%	77.3%	75.0%	92.3%	63.6%
2012	83.2%	80.8%	76.9%	90.0%	84.2%	90.0%	71.7%	93.3%	100.0%	83.8%
2013	70.3%	80.0%	88.4%	95.0%	81.7%	89.6%	80.0%	89.3%	92.0%	83.7%
2014	64.5%	45.3%	81.9%	85.0%	88.4%	84.0%	84.9%	96.7%	93.3%	82.1%

Overall Mean Placement Rates for Graduates



For those students who haven't been able to find employment after graduation, what do you believe is the primary reason?

		Radiography	Radiation Therapy	Nuclear Medicine Technology	Overall
Too many graduates in relation to the number of open positions	N	73	19	9	101
	%	23.9%	40.4%	17.6%	25.0%
Current workforce is delaying retirement	N	41	7	7	82
	%	13.4%	14.9%	13.7%	20.3%
Management not filling open positions	N	54	4	9	67
	%	17.6%	8.5%	17.6%	16.6%
Hospital closings	N	1	0	0	55
	%	0.3%	0.0%	0.0%	13.6%
Facilities cutting back positions	N	57	11	14	1
	%	18.6%	23.4%	27.5%	0.2%
Other	N	80	6	12	98
	%	26.1%	12.8%	23.5%	24.3%
Total	N	306	47	51	404
	%	100.0%	100.0%	100.0%	100.0%

There were no statistically significant differences between groups.

For those students who haven't been able to find employment after graduation, what do you believe is the primary reason?

