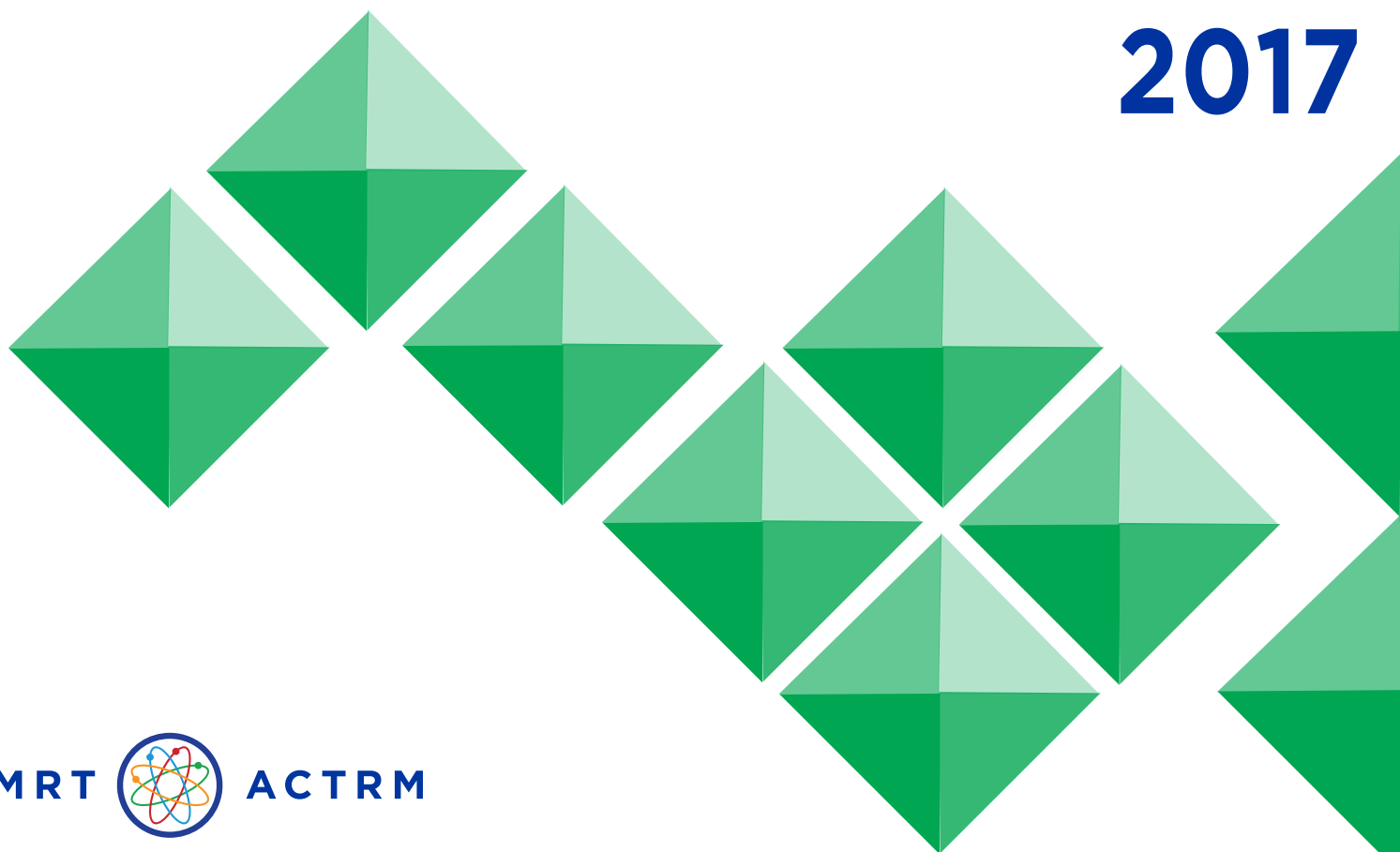


Human Resources Survey: Medical Imaging and Radiation Therapy

2017



Prepared for the Canadian Association of Medical Radiation Technologists (CAMRT) by

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May 18, 2018.

Executive Summary

This summary outlines the key findings of the 2018 CAMRT Health Human Resources (HHR) Survey in Medical Imaging (MI) and Radiation Therapy (RT). The data provides an overview of the current HHR landscape across the MRT community and is compared with the 2015 baseline results.

Survey development

The CAMRT first developed a baseline HHR database in 2015. For 2018, the managers list was updated, and additional efforts were made to increase participation in the survey. Similar responses throughout this survey to the same questions used in 2015 confirm the accuracy and reliability of the data.

The CAMRT HHR survey is designed to:

- Improve forecasting of future human resources needs in imaging and radiation therapy;
- Build a health human resource database for the MRT community;
- Identify where potential vacancies/growth are located.

Results

The survey was sent in January 2018 to **379** managers (**340** in MI and **39** in RT) (Confidence Interval: +/-3.73; 95%). The overall survey response rate was **245** (**215** in MI and **30** in RT).

Key findings

Medical Imaging facilities and future FTEs:

Survey respondents were asked to indicate the modality and future FTE (full-time equivalent) requirements for 18 medical imaging disciplines to better understand the scale and need for future MRT job placements.

Who responded to the survey?

Majority were **managers** (**76.9%** of respondents for both MI and RT surveys)

-Respondents in MI were **older** overall compared to RT

-Respondents for both MI and RT were mostly in the **50-54 years** age group

-More respondents **for MI** were in the **50-54 years and 60+ years** age groups in 2018 compared to in 2015

Located primarily in **ON, QC, BC and AB** in both RT and MI (2015 and 2018)

Response characteristics are representative of the population sampled

Figure 1 highlights the disciplines where projected FTEs are expected to change significantly over the next 3 years or are of strategic importance:

Modalities	2015			2018		
	Facilities	Vacancies	Future	Facilities	Vacancies	Future
Radiology Technology / OR ^A	148	102.12 FTEs	28.12 FTEs	179	68.02 FTEs	91.29 FTEs
Computer Tomography ^A	101	16.16 FTEs	18.18 FTEs	142	24.14 FTEs	56.80 FTEs
Angiography / Interventional ^A	47	4.70 FTEs	6.58 FTEs	86	12.04 FTEs	30.10 FTEs
Electro / Cardiac Cath	23	0 FTEs	1.15 FTEs	54	0 FTEs	7.56 FTEs
Mammography	102	0 FTEs	6.12 FTEs	134	8.04 FTEs	14.74 FTEs
Bone Mineral Densitometry	75	0.75 FTEs	1.50 FTEs	106	0 FTEs	0 FTEs
Nuclear Medicine	73	5.11 FTEs	0.73 FTEs	100	8.00 FTEs	2.00 FTEs
Cyclotron	6	0 FTEs	4.98 FTEs	15	0 FTEs	0 FTEs
PET-CT	21	0 FTEs	10.71 FTEs	33	0 FTEs	12.54 FTEs
PET-MR	3	0 FTEs	0 FTEs	8	0 FTEs	0 FTEs
Magnetic Resonance ^B	74	17.76 FTEs	35.52 FTEs	121	13.31 FTEs	43.56 FTEs
Ultrasound / Sonography ^B	137	84.94 FTEs	56.17 FTEs	172	60.20 FTEs	53.32 FTEs
Echocardiology	76	5.32 FTEs	11.40 FTEs	117	16.38 FTEs	8.19 FTEs
PACS	127	1.27 FTEs	7.62 FTEs	173	6.92 FTEs	0 FTEs
Clinical Education	94	2.83 FTEs	0 FTEs	100	0 FTEs	-1.00 FTEs
Research ^C	41	0 FTEs	0 FTEs	58	0 FTEs	0 FTEs
Professional Practice ^C	78	0 FTEs	0 FTEs	60	0 FTEs	0 FTEs
Quality Control / Quality Improv ^C	117	1.17 FTEs	5.85 FTEs	154	3.08 FTEs	1.54 FTEs

Figure 1. Medical imaging facilities and future FTEs.

Key takeaways:

A = Indicates significant projected growth in FTE positions vs. 2015 data.

B = Indicates significant projected growth in FTE positions as similarly identified in 2015.

C = Indicates no additional growth in FTE positions vs. 2015 data.

See pages 19-37 for more details on these modalities.

Radiation Therapy growth and service volumes:

Figure 2 demonstrates the key areas from RT for service volume changes.

	Year	CURRENT Human			CHANGES over the next three years for FTE requirements					
		Resource FTE Profile			A Decrease		Will remain the same		An Increase	
		N	Mean	STD	N	Percent	N	Percent	N	Percent
Brachytherapy	2015	30	2.20	2.31	0	0.0%	19	70.4%	8	29.6%
	2018	27	2.00	2.37	0	0.0%	12	50.0%	12	50.0%
Dosimetry / Treatment Planning	2015	30	7.95	6.34	0	0.0%	15	53.6%	13	46.4%
	2018	27	7.79	7.78	2	8.3%	13	54.2%	9	37.5%
External Beam Treatment	2015	30	26.60	19.09	0	0.0%	20	74.1%	7	25.9%
	2018	27	24.47	24.01	0	0.0%	12	52.2%	11	47.8%
Simulation / Mold Room	2015	30	5.52	5.10	2	7.7%	23	88.5%	1	3.8%
	2018	27	5.43	5.86	0	0.0%	13	54.2%	11	45.8%
Radiation Therapy, Advanced Practice	2015	30	0.80	1.85	1	4.2%	18	75.0%	5	20.8%
	2018	27	1.07	2.63	0	0.0%	19	86.4%	3	13.6%
Clinical Education	2015	30	1.79	3.18	2	7.4%	24	88.9%	1	3.7%
	2018	27	2.88	10.45	1	4.3%	22	95.7%	0	0.0%
Research	2015	30	0.29	0.94	0	0.0%	18	75.0%	6	25.0%
	2018	27	0.20	0.49	1	5.0%	17	85.0%	2	10.0%
Professional Practice	2015	30	0.43	1.25	0	0.0%	22	88.0%	3	12.0%
	2018	27	0.29	0.81	0	0.0%	20	90.9%	2	9.1%
Quality Control / Quality Improvement	2015	30	1.08	1.69	0	0.0%	20	76.9%	6	23.1%
	2018	27	0.34	0.82	0	0.0%	20	90.9%	2	9.1%

Figure 2. Radiation Therapy breakdown of service volume changes.

Key takeaways:

For radiation therapy over the next three years, data suggests significant growth in brachytherapy, dosimetry/treatment planning, external beam treatment and simulation/mold room. The overall corresponding staffing increase to accommodate the overall increases in service volume over the next three years is 1.11 FTE/facility (figure 3).

See page 38 for more details on Radiation Therapy, General.

Projected service volume changes for both MI and RT:

Survey participants were asked to provide insight into how service volumes will change over the next three years. The main highlights are as follows in **Figure 3**:

MODALITY	How will service volumes change?			Top Reason(s) for Change		Change in staffing FTE MEAN
	Increase	No change	Decrease			
Radiological Technology / OR	45.51%	52.25%	2.24%	Increased workload	33.15%	0.51
Computed Tomography	34.79%	60.87%	4.35%	Increased workload	31.40%	0.40
Angiography / Interventional	91.53%	5.08%	3.38%	Practice changes; Increased workload	19.67% 29.51%	0.35
Magnetic Resonance	35.37%	64.63%	0.00%	Increased workload	27.38%	0.36
Ultrasound / Sonography	33.07%	62.99%	3.93%	Increased workload	30.30%	0.31
Radiation Therapy, General	81.48%	18.52%	0.00%	Patient demographics Increased workload	23.64% 29.09%	1.11
Nuclear Medicine	14.09%	78.87%	7.05%	Increased workload Decreased workload	22.22% 14.81%	0.02
Bone Mineral Densitometry	3.75%	91.25%	5.00%	Increased workload Decreased workload	18.75% 25.00%	0.00

Figure 3. Projected service volume changes.

Key takeaways:

- In general, there seems to be consensus that:
 - Extensive service volume growth is expected for both angiography/interventional and radiation therapy;
 - Significant volume growth is expected for radiological technology/OR, computed tomography, magnetic resonance and ultrasound/sonography;
 - Minimal service volume change or staffing changes are expected for both nuclear medicine and bone mineral densitometry.
- All modalities (figure 3) indicated increased workload as the number one reason for suggested rise in case volumes.
- Increase in the FTE requirements have also been projected to deal with the increased case volumes. Additional information would need to be collected to see if the projected increases would be sufficient to deal with the volume changes.

Projections for retirement:

Survey respondents were asked to estimate retirement trends over the next 5 and 10 years. The projections of those who are eligible for retirement and those who will retire are important for labour planning purposes across the Canadian MRT landscape.

	5 years			10 years		
	N	Mean	Percent *	N	Mean	Percent*
Medical Imaging	130	3.87	5.6%	120	5.50	7.9%
Radiation Therapy	23	5.57	11.7%	23	8.74	18.4%

Figure 4. Staff believed to be eligible for retirement in 5 or 10 years.

	5 years			10 years		
	N	Mean	Percent*	N	Mean	Percent*
Medical Imaging	127	2.91	4.2%	116	3.91	5.6%
Radiation Therapy	22	3.09	6.5%	22	5.09	10.7%

Figure 5. Belief of how many (of those eligible) will retire in 5 or 10 years.

* Percentage of the total in MI and RT: The percentages indicate an approximation from the data calculated using the means of MRT staff FTE from RT and MI.

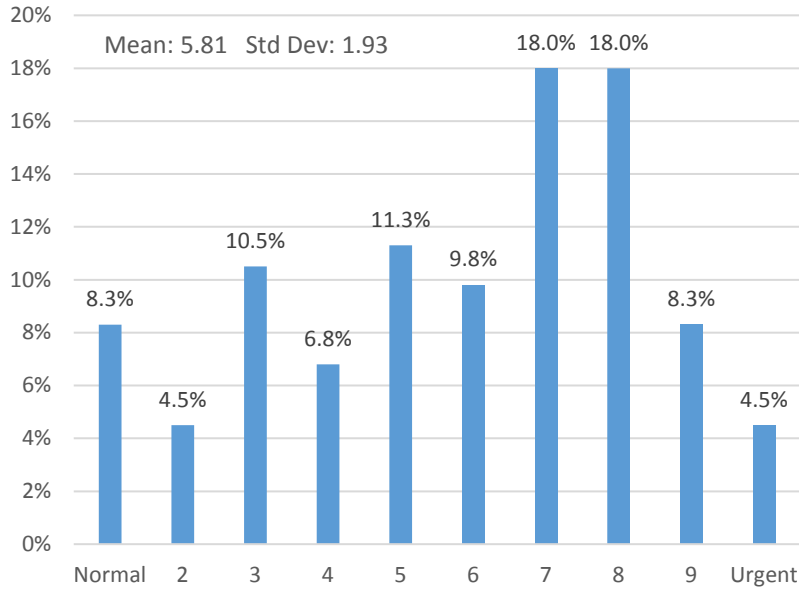
Key takeaways:

- There will be staffing positions that require filling in the next 5-10 years in both MI and RT;
- Respondents believe there will be quite a few retirements over the next 5 or 10 years, with more projected in RT than MI;
- Although eligible for retirement, the perception of survey respondents is that many will continue to work past their respective eligibility date;
- Respondents were asked if they would replace staff if they retired and over 70% in both MI and RT (over 2015 and 2018) said that they would replace retiring staff (see graph on page 39).

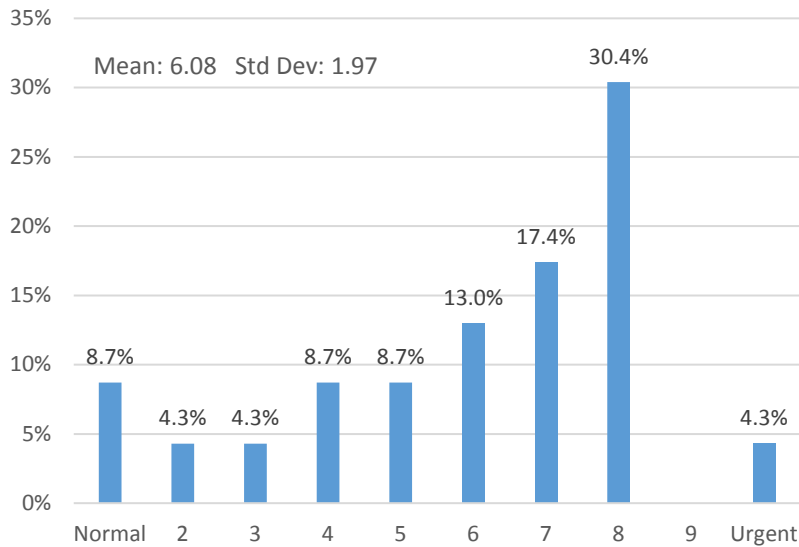
Projections for the appropriate balance between staffing and caseloads:

On a scale from 1 to 10 with 1 indicating normal average caseloads to 10 indicating well-above the average number of urgent caseloads with ever-pressing timelines, where would you score your caseloads?

Medical Imaging



Radiation Therapy



Key takeaways:

- The perception from both MI and RT is that the appropriate balance between staffing and caseloads is off considerably;
- Anecdotally we know that both MI and RT feel they are experiencing more urgent caseloads, especially with an aging population (see pages 50-51);
- We need to conduct a targeted survey to quantify how caseloads have been growing over time and to gain an understanding of what is being done to best address these increasing caseloads which includes more complex cases due to the aging population.

Purpose & Methodology

Purpose

For both the surveys of Medical Imaging (MI) and Radiation Therapy (RT), the purpose of these surveys remains threefold:

- To improve forecasting Human Resources needs for the future;
- To build a foundation of Health Human Resource statistics/data;
- To provide the opportunity to determine where potential vacancies/growth are located.

Methodology

The previous survey conducted in 2015 was reviewed by Keith Christopher with input from several professionals from both MI and RT, and appropriate changes were made for the 2018 surveys. This process improves the current surveys and ensures that questions were clear and relevant.

A considerable amount of time was spent refining the MI and RT populations of managers to be surveyed to ensure that these populations were as complete and accurate as possible.

On January 15, 2018, a letter announcing the coming surveys was emailed to our populations. Research and our experience demonstrate that letters announcing coming surveys increase survey responses significantly.

On Monday, January 22, the surveys were emailed to the respective MI and RT populations. The deadline for returning the completed surveys was set at Tuesday, February 6. Two general reminders were emailed to these two populations, the first on Wednesday, January 31, and the second on Monday, February 5.

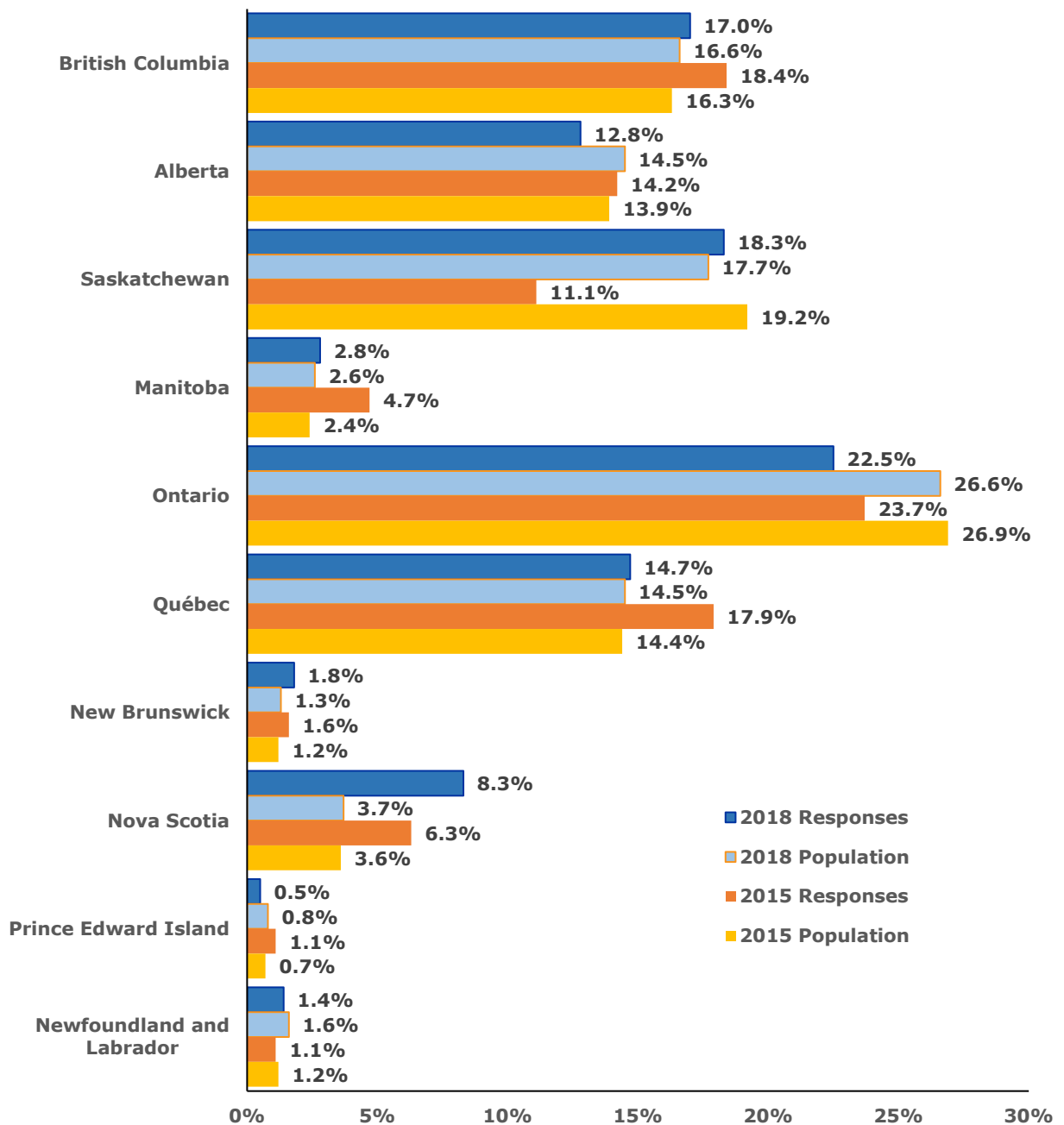
To increase our response rate, on February 8, we implemented a successful strategy we have used previously whereby we emailed the non-respondents a brief personal message, encouraging them to complete the survey as soon as possible. This final strategy increased our response rate by over 25 percent.

The final response rate stood at 245, with 215 MI and 30 RT responding to our survey.

The population stood at 379, with 340 MI and 39 RT. Therefore, the confidence limits for the total population compared to the sample response rate (379 vs 245) stood at +/- 3.73 at the 95% range, i.e. 19 times out of 20. And the confidence limits for the MI population compared to the MI sample response rate (340 vs 215) stood at +/- 4.06 at the 95% range. Additionally, the confidence limits for RT population compared to the RT sample response rate (39 vs 30) stood at +/- 8.71 at the 95% range.

Not only were the confidence limits for both these surveys good, but also note on the graph on the page 10, the overall dispersion of the survey respondents compared to the population across the country was similar. This fact further supports the accuracy and reliability of these current survey results.

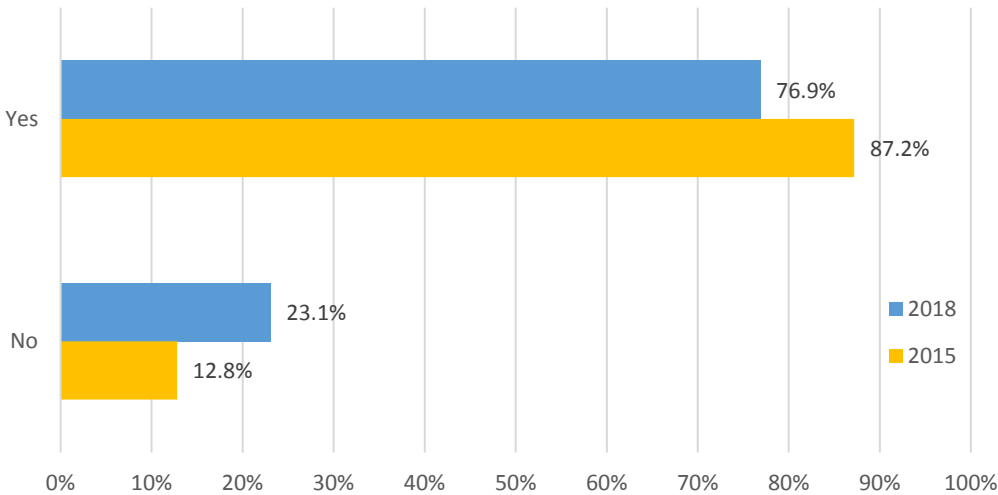
Dispersion of Sample Responses compared to Population



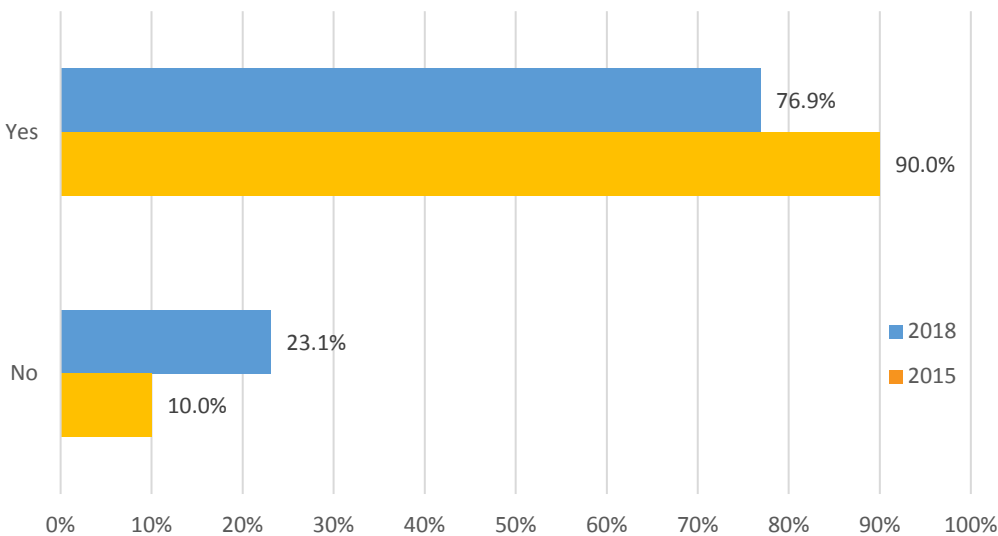
Overall, the dispersions of the samples in the 2015 and 2018 surveys were similar to dispersions in their respective populations across the provinces. These similarities increased the likelihood that the sample responses to both these surveys were representative of their populations.

Are you responsible for making Human Resource decisions in recruitment and retention?

Medical Imaging



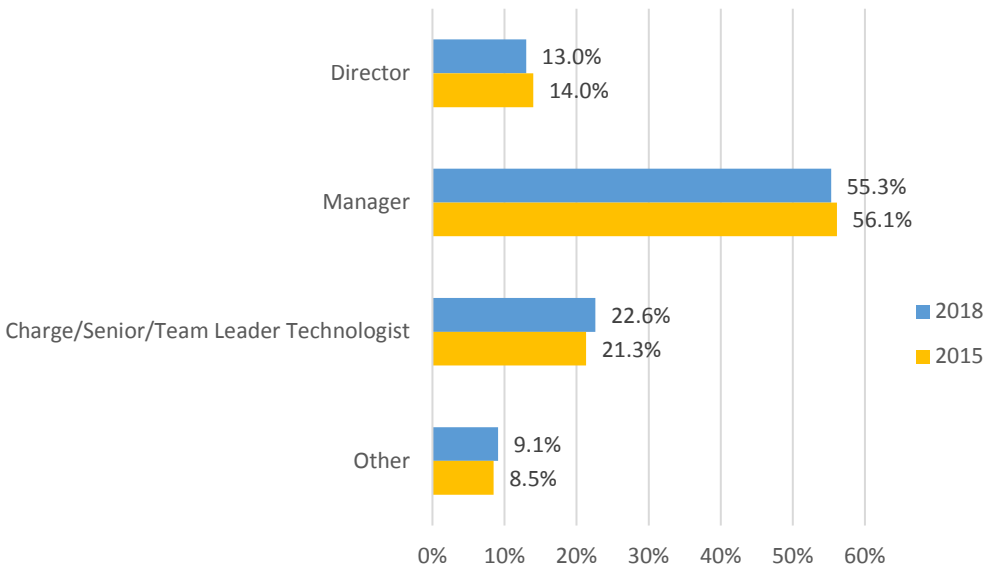
Radiation Therapy



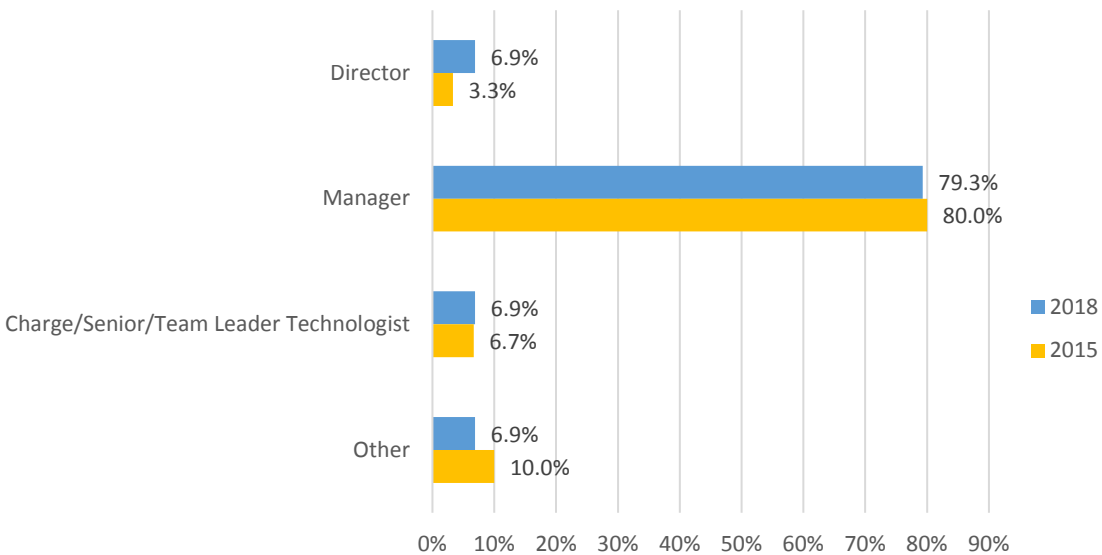
In this 2018 survey, our MI response rate was up with 160 compared to 143 respondents in the 2015 survey answering yes to this question. For RT, the response rates were similar over the two surveys with 24 in 2018 compared to 27 in 2015 answering yes to this question.

What title most accurately describes your current position?

Medical Imaging



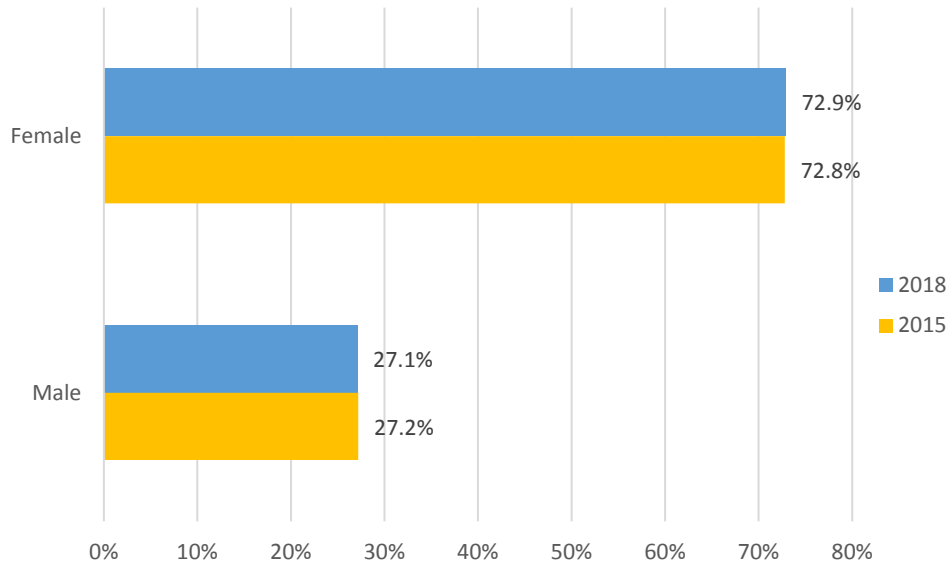
Radiation Therapy



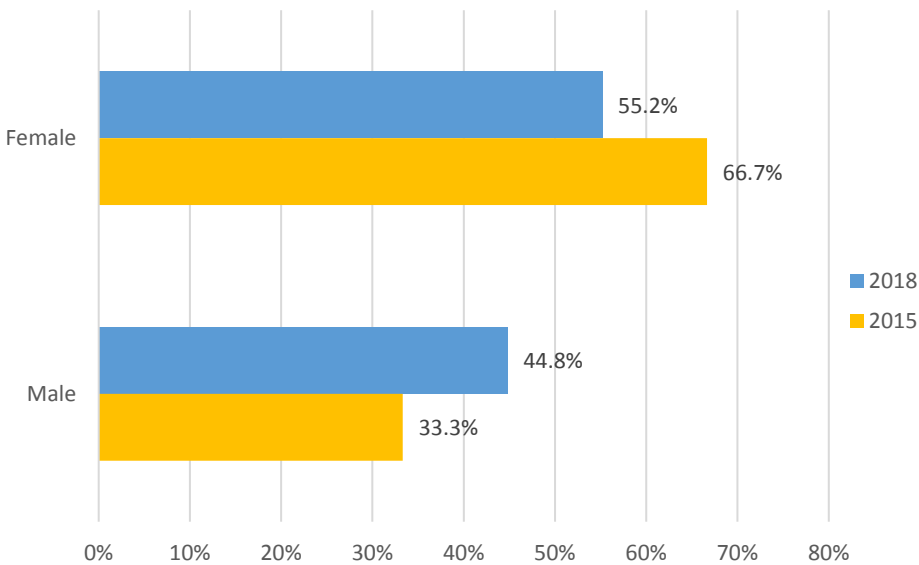
As in the 2015 survey, by far the most common title that describes the respondent's position for both MIs and RTs was "manager". The title "director" was relatively uncommon in both disciplines.

What is your gender?

Medical Imaging



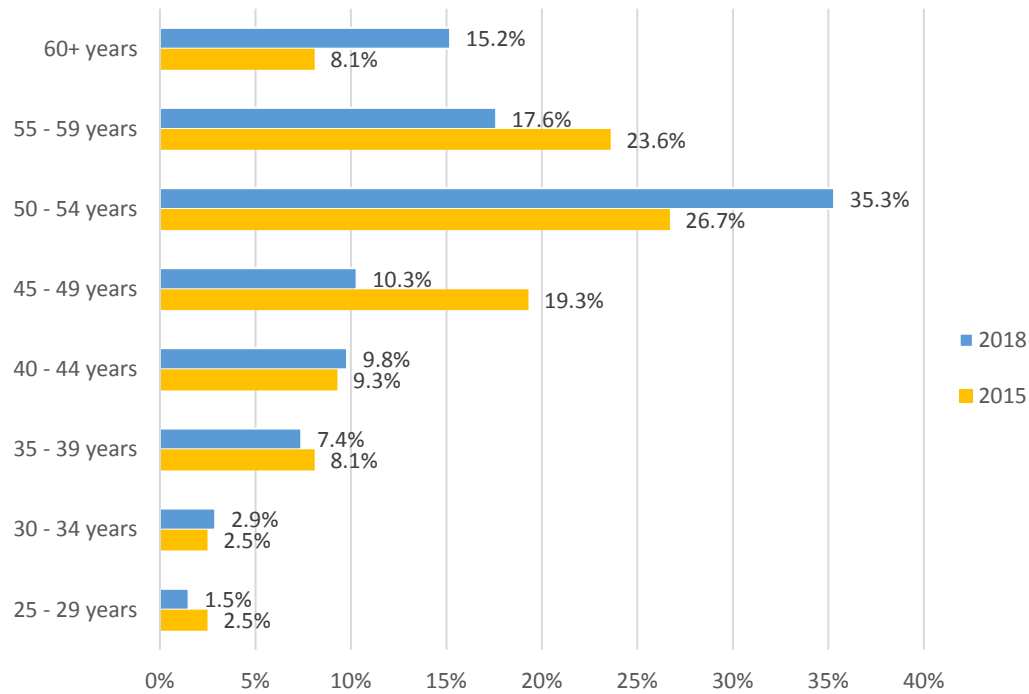
Radiation Therapy



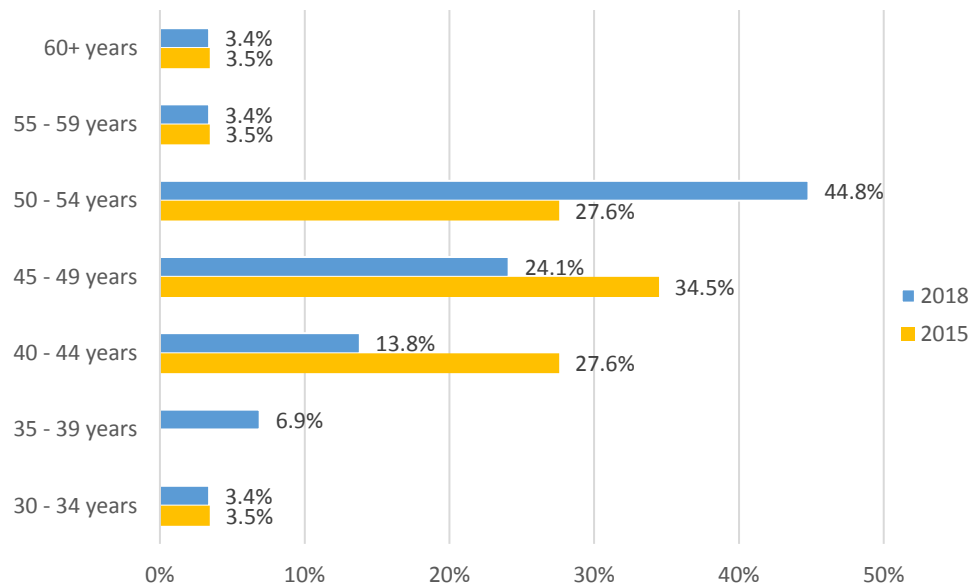
By far the most common gender among respondents in both MI and RT in both surveys was "female". These results were consistent with previous surveys.

What age group are you in?

Medical Imaging



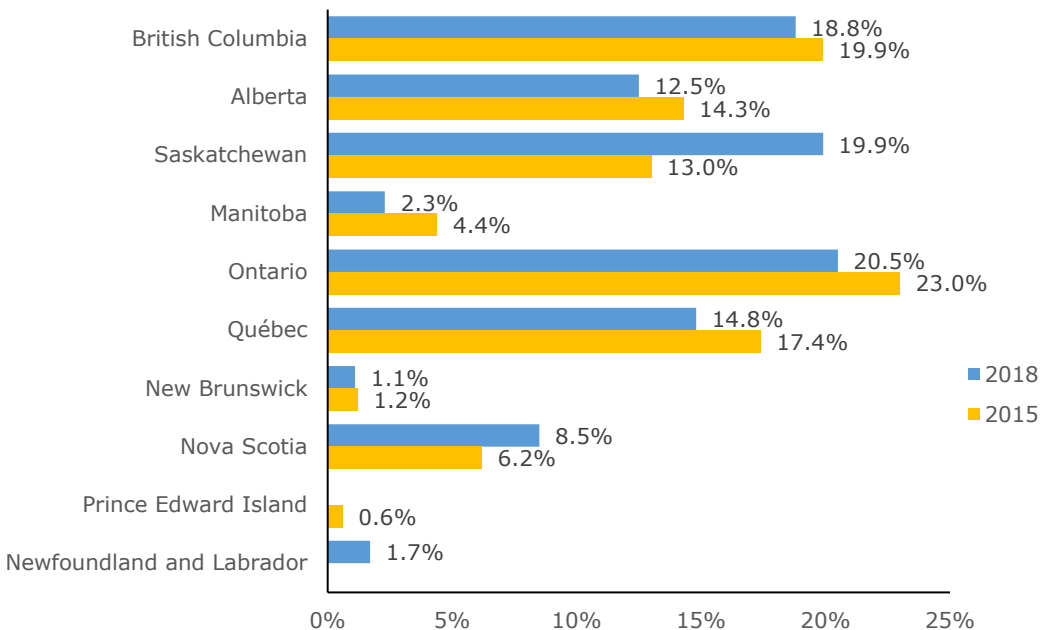
Radiation Therapy



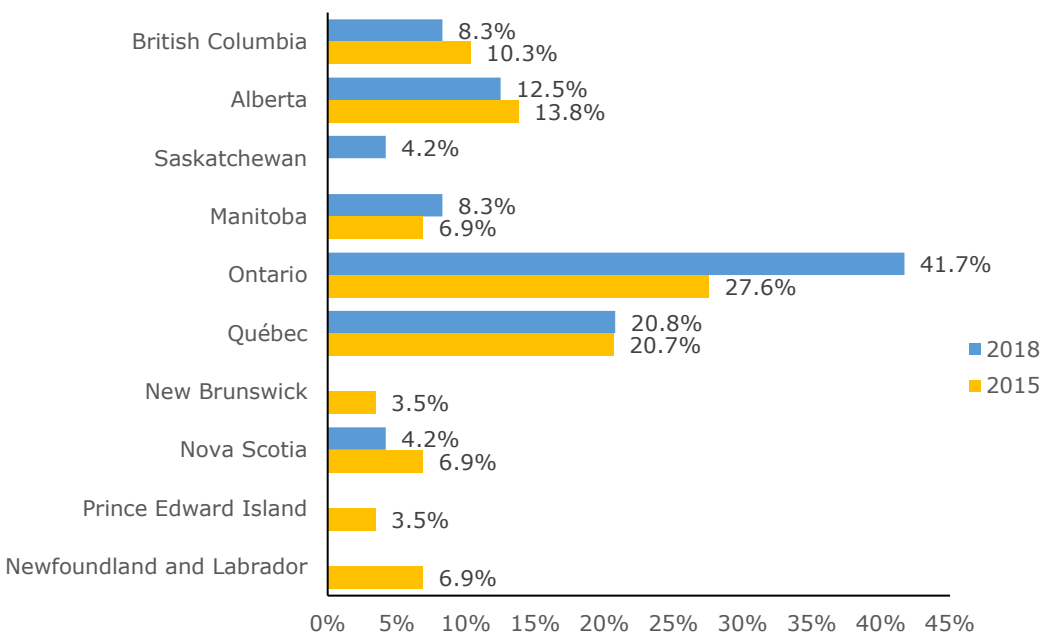
On average, the respondents in RT tended to be younger compared to those from MI. These results were consistent with previous surveys.

Which province/territory do you work in?

Medical Imaging



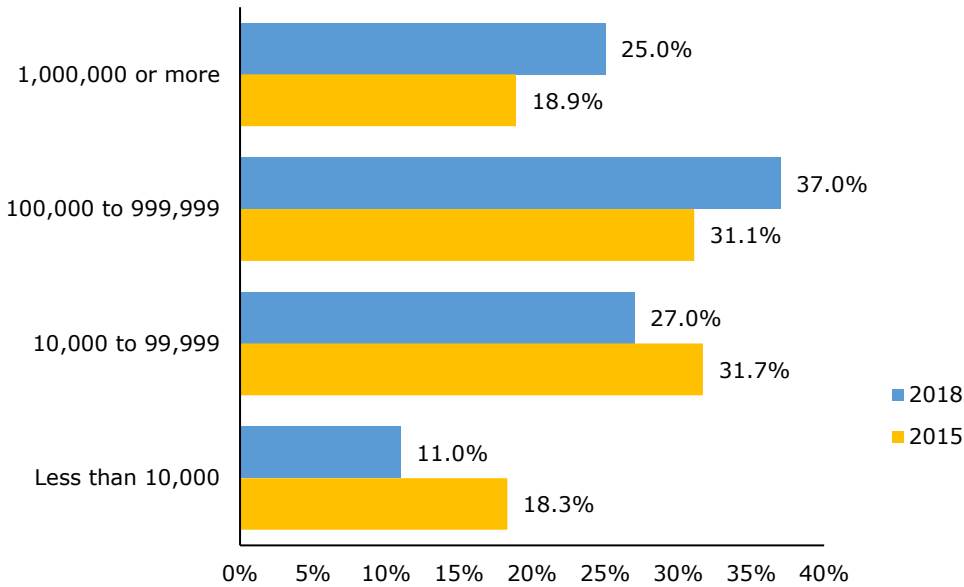
Radiation Therapy



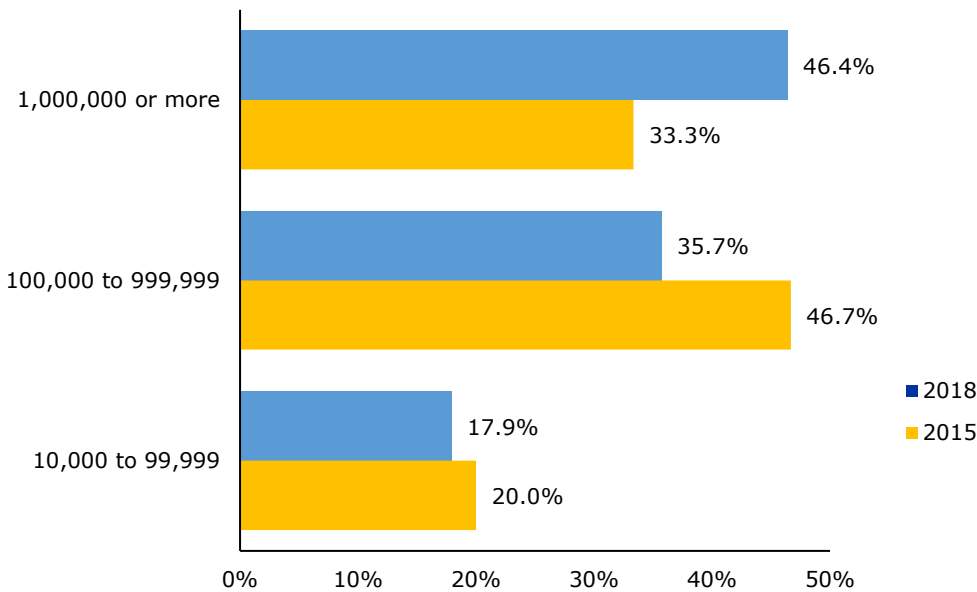
In both MI and RT, the provinces where most respondents resided were Ontario, Quebec, British Columbia and Alberta. Overall the dispersion was similar over the two surveys, though somewhat more so for MI than RT.

What is the population of the city/town/catchment area you work in?

Medical Imaging



Radiation Therapy



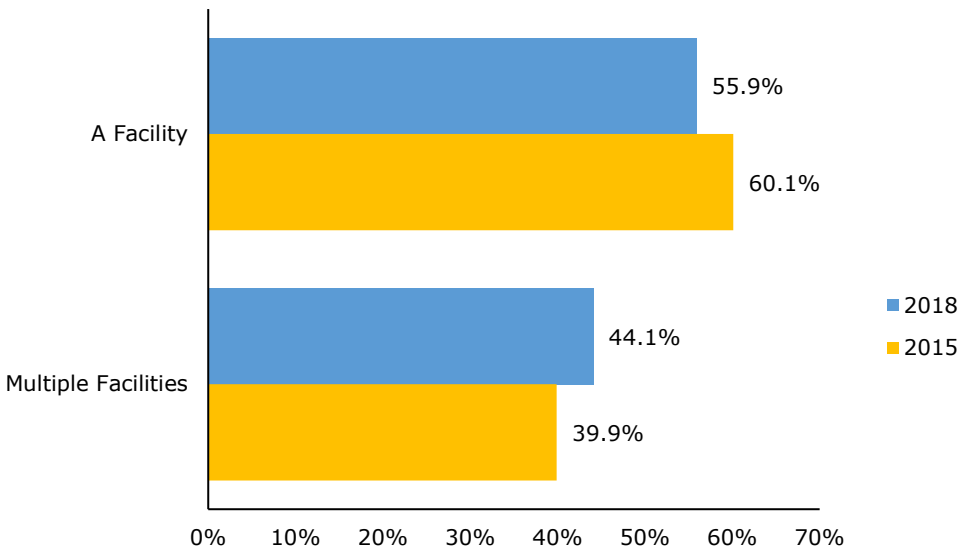
In the current survey we added the term “catchment area” to this question to capture those institutions which covered more than just a town or city. Nevertheless, the dispersion was similar over the two surveys for MI. For RT, however, this change in definition reversed the first two categories over the two surveys.

A facility is a building where the various MRT services are provided and where these services may be offered in more than one location within this building.

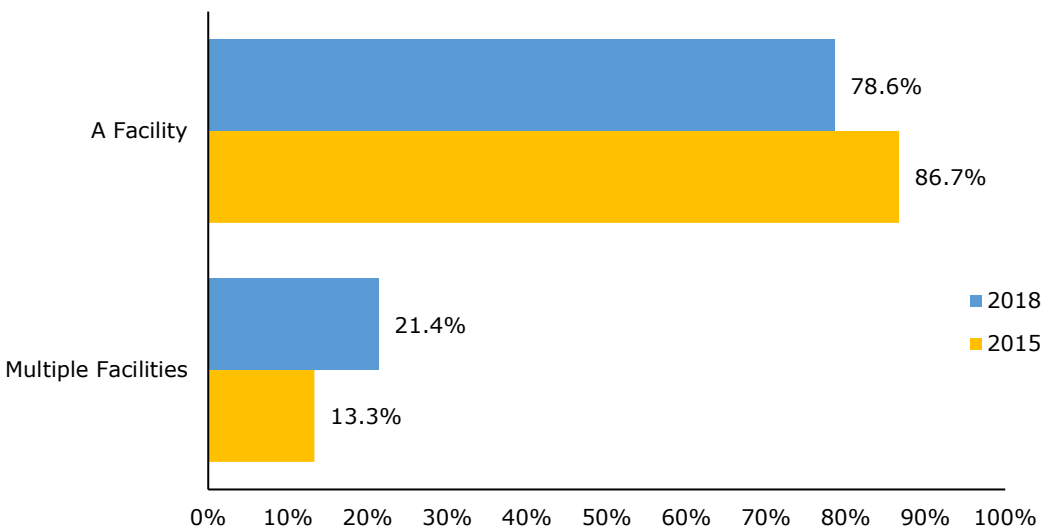
Multiple facilities are two or more buildings where the various MRT services are provided and where these services may be offered in more than one location within these buildings.

Are you reporting for?

Medical Imaging



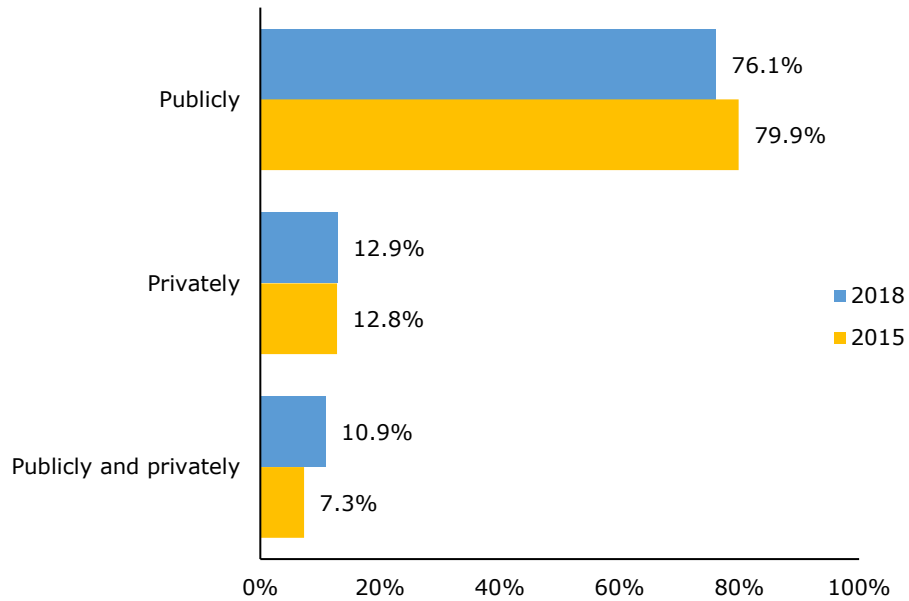
Radiation Therapy



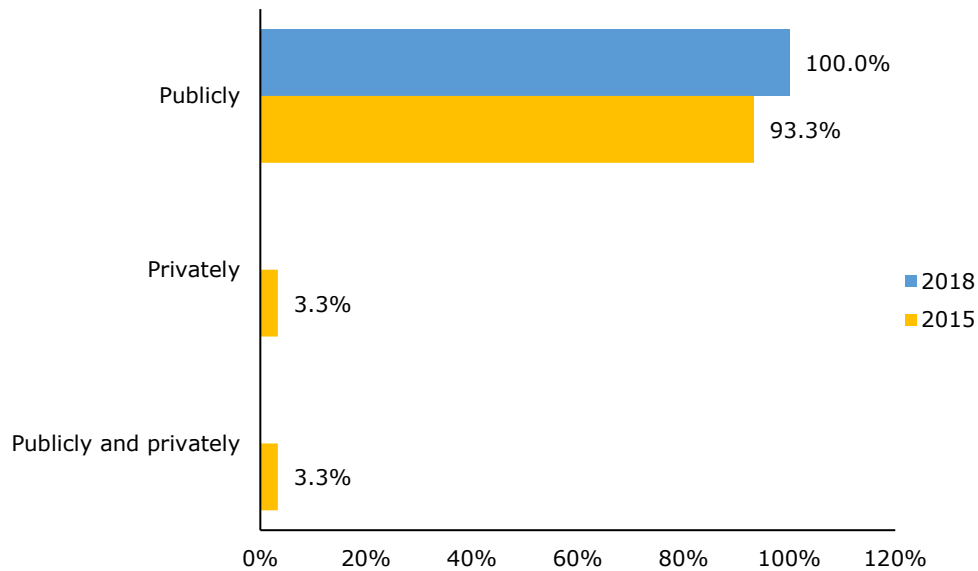
The dispersion to this question was similar for MI and RT over the two surveys.

How is your facility / multiple facilities funded?

Medical Imaging



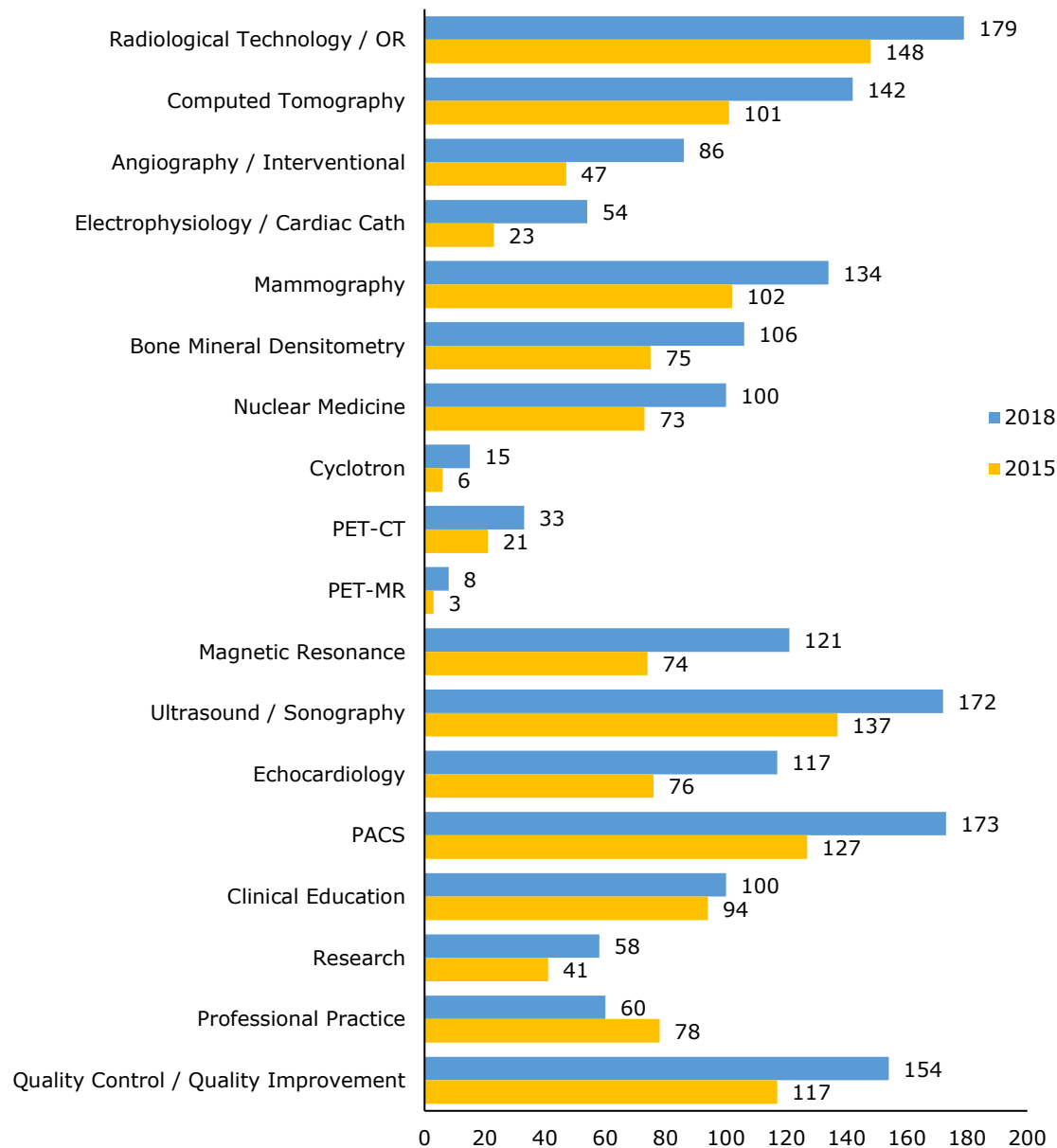
Radiation Therapy



The funding was similar for MI, but in RT in 2018 all institutions were “publicly” funded.

Medical Imaging Modalities

Number of Respondents reporting having these Modalities from Sample of 215 in 2018 and 164 in 2015



Overall the number of respondents in MI reporting having these modalities in the 2018 survey were up considerably over those reporting in the 2015 survey. The only exception to this trend was in “professional practice”, likely because in the 2018 survey the term professional practice was defined to restrict who could be included in this category.

Radiological Technology / OR

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	19.06	31.21
MRT Staff FTE Vacancies	Mean	Std Dev
	0.38	1.04

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	22	12.36%
10 - 19.99 % increase	10	5.62%
0.01 - 9.99 % increase	49	27.53%
No change	93	52.25%
0.01 - 9.99 % decrease	2	1.12%
10 - 19.99 % decrease	2	1.12%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	19	10.50%
Facility modifications	18	9.94%
Funding changes	12	6.63%
MRT staffing	9	4.97%
Patient demographics	21	11.60%
Physician staffing	12	6.63%
Practice changes	18	9.94%
Increased workload	60	33.15%
Decreased workload	3	1.66%
Not applicable	9	4.97%
MRT Staffing Changes	Number of Respondents	Percent
No change	107	67.30%
Increase	36	22.64%
Decrease	4	2.52%
Do not know	12	7.55%
Change in MRT staffing FTE	Mean	Std Dev
	0.51	2

Total Vacancies across 179 facilities / multiple facilities offering this modality equals 179×0.38 (vacancy mean) = 68.02 FTEs.

Projected Net FTE Increases over the next three years for 179 facilities / multiple facilities offering this modality equals 179×0.51 (future mean) = 91.29 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

Computed Tomography

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	5.72	10.88
MRT Staff FTE Vacancies	Mean	Std Dev
	0.17	0.91

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	3	2.61%
10 - 19.99 % increase	4	3.48%
0.01 - 9.99 % increase	33	28.70%
No change	70	60.87%
0.01 - 9.99 % decrease	5	4.35%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	13	10.74%
Facility modifications	9	7.44%
Funding changes	12	9.92%
MRT staffing	7	5.79%
Patient demographics	15	12.40%
Physician staffing	8	6.61%
Practice changes	12	9.92%
Increased workload	38	31.40%
Decreased workload	0	0.00%
Not applicable	7	5.79%
MRT Staffing Changes	Number of Respondents	Percent
No change	90	78.26%
Increase	17	14.78%
Decrease	1	0.87%
Do not know	7	6.09%
Change in MRT staffing FTE	Mean	Std Dev
	0.4	1.45

Total Vacancies across 142 facilities / multiple facilities offering this modality equals 142×0.17 (vacancy mean) = 24.14 FTEs.

Projected Net FTE Increases over the next three years for 142 facilities / multiple facilities offering this modality equals 142×0.4 (future mean) = 56.80 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be 4.0 ± 3.0 ; that is, would range from +1.0 to +7.0

Angiography / Interventional

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	3.34	5.86
MRT Staff FTE Vacancies	Mean	Std Dev
	0.14	0.63

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	1	1.69%
10 - 19.99 % increase	13	22.03%
0.01 - 9.99 % increase	40	67.80%
No change	3	5.08%
0.01 - 9.99 % decrease	1	1.69%
10 - 19.99 % decrease	1	1.69%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	6	9.84%
Facility modifications	3	4.92%
Funding changes	6	9.84%
MRT staffing	1	1.64%
Patient demographics	6	9.84%
Physician staffing	7	11.48%
Practice changes	12	19.67%
Increased workload	18	29.51%
Decreased workload	0	0.00%
Not applicable	2	3.28%
MRT Staffing Changes	Number of Respondents	Percent
No change	47	79.66%
Increase	9	15.25%
Decrease	2	3.39%
Do not know	1	1.69%
Change in MRT staffing FTE	Mean	Std Dev
	0.35	0.92

Total Vacancies across 86 facilities / multiple facilities offering this modality equals 86×0.14 (vacancy mean) = 12.04 FTEs.

Projected Net FTE Increases over the next three years for 86 facilities / multiple facilities offering this modality equals 86×0.35 (future mean) = 30.10 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

Electrophysiology / Cardiac Cath

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	1.49	4.19
MRT Staff FTE Vacancies	Mean	Std Dev
	0	0

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	1	2.63%
10 - 19.99 % increase	0	0.00%
0.01 - 9.99 % increase	2	5.26%
No change	35	92.11%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	1	8.33%
Facility modifications	0	0.00%
Funding changes	0	0.00%
MRT staffing	1	8.33%
Patient demographics	2	16.67%
Physician staffing	0	0.00%
Practice changes	2	16.67%
Increased workload	2	16.67%
Decreased workload	0	0.00%
Not applicable	4	33.33%
MRT Staffing Changes	Number of Respondents	Percent
No change	37	97.37%
Increase	1	2.63%
Decrease	0	0.00%
Do not know	0	0.00%
Change in MRT staffing FTE	Mean	Std Dev
	0.14	0.81

Total Vacancies across 54 facilities / multiple facilities offering this modality equals 54×0 (vacancy mean) = 0 FTEs.

Projected Net FTE Increases over the next three years for 54 facilities / multiple facilities offering this modality equals 54×0.14 (future mean) = 7.56 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

Mammography

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	3.64	7.92
MRT Staff FTE Vacancies	Mean	Std Dev
	0.06	0.25

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	1	0.95%
0.01 - 9.99 % increase	17	16.19%
No change	84	80.00%
0.01 - 9.99 % decrease	3	2.86%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	6	10.71%
Facility modifications	4	7.14%
Funding changes	4	7.14%
MRT staffing	4	7.14%
Patient demographics	7	12.50%
Physician staffing	3	5.36%
Practice changes	6	10.71%
Increased workload	17	30.36%
Decreased workload	0	0.00%
Not applicable	5	8.93%
MRT Staffing Changes	Number of Respondents	Percent
No change	93	88.57%
Increase	9	8.57%
Decrease	1	0.95%
Do not know	2	1.90%
Change in MRT staffing FTE	Mean	Std Dev
	0.11	0.55

Total Vacancies across 134 facilities / multiple facilities offering this modality equals 134×0.06 (vacancy mean) = 8.04 FTEs.

Projected Net FTE Increases over the next three years for 134 facilities / multiple facilities offering this modality equals 134×0.11 (future mean) = 14.74 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be 4.0 ± 3.0 ; that is, would range from +1.0 to +7.0

Bone Mineral Densitometry

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	1.69	5.84
MRT Staff FTE Vacancies	Mean	Std Dev
	0	0

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	0	0.00%
0.01 - 9.99 % increase	3	3.75%
No change	73	91.25%
0.01 - 9.99 % decrease	4	5.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	0	0.00%
Facility modifications	0	0.00%
Funding changes	2	12.50%
MRT staffing	1	6.25%
Patient demographics	1	6.25%
Physician staffing	0	0.00%
Practice changes	1	6.25%
Increased workload	3	18.75%
Decreased workload	4	25.00%
Not applicable	4	25.00%
MRT Staffing Changes	Number of Respondents	Percent
No change	79	98.75%
Increase	0	0.00%
Decrease	0	0.00%
Do not know	1	1.25%
Change in MRT staffing FTE	Mean	Std Dev
	0	0

Total Vacancies across 106 facilities / multiple facilities offering this modality equals 106×0 (vacancy mean) = 0 FTEs.

Projected Net FTE Increases over the next three years for 106 facilities / multiple facilities offering this modality equals 106×0 (future mean) = 0 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be 4.0 ± 3.0 ; that is, would range from +1.0 to +7.0

Nuclear Medicine

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	3.98	4.95
MRT Staff FTE Vacancies	Mean	Std Dev
	0.08	0.3

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	2	2.82%
0.01 - 9.99 % increase	8	11.27%
No change	56	78.87%
0.01 - 9.99 % decrease	3	4.23%
10 - 19.99 % decrease	1	1.41%
more than 20 % decrease	1	1.41%
Reasons for Change	Number of Respondents	Percent
Equipment change	4	14.81%
Facility modifications	0	0.00%
Funding changes	1	3.70%
MRT staffing	2	7.41%
Patient demographics	1	3.70%
Physician staffing	1	3.70%
Practice changes	4	14.81%
Increased workload	6	22.22%
Decreased workload	4	14.81%
Not applicable	4	14.81%
MRT Staffing Changes	Number of Respondents	Percent
No change	62	87.32%
Increase	2	2.82%
Decrease	3	4.23%
Do not know	4	5.63%
Change in MRT staffing FTE	Mean	Std Dev
	0.02	0.28

Total Vacancies across 100 facilities / multiple facilities offering this modality equals 100×0.08 (vacancy mean) = 8.0 FTEs.

Projected Net FTE Increases over the next three years for 100 facilities / multiple facilities offering this modality equals 100×0.02 (future mean) = 2.0 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

Cyclotron

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	0.22	0.67
MRT Staff FTE Vacancies	Mean	Std Dev
	0	0

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	1	11.11%
10 - 19.99 % increase	0	0.00%
0.01 - 9.99 % increase	0	0.00%
No change	8	88.89%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	0	0.00%
Facility modifications	0	0.00%
Funding changes	1	25.00%
MRT staffing	0	0.00%
Patient demographics	1	25.00%
Physician staffing	0	0.00%
Practice changes	1	25.00%
Increased workload	1	25.00%
Decreased workload	0	0.00%
Not applicable	0	0.00%
MRT Staffing Changes	Number of Respondents	Percent
No change	9	100.00%
Increase	0	0.00%
Decrease	0	0.00%
Do not know	0	0.00%
Change in MRT staffing FTE	Mean	Std Dev
	0	0

Total Vacancies across 15 facilities / multiple facilities offering this modality equals 15 x 0 (vacancy mean) = 0 FTEs.

Projected Net FTE Increases over the next three years for 15 facilities / multiple facilities offering this modality equals 15 x 0 (future mean) = 0 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be 4.0 + or - 3.0; that is, would range from +1.0 to +7.0

PET-CT

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	1.86	3.34
MRT Staff FTE Vacancies	Mean	Std Dev
	0	0

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	1	5.00%
10 - 19.99 % increase	1	5.00%
0.01 - 9.99 % increase	1	5.00%
No change	17	85.00%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	2	10.53%
Facility modifications	1	5.26%
Funding changes	3	15.79%
MRT staffing	2	10.53%
Patient demographics	2	10.53%
Physician staffing	2	10.53%
Practice changes	1	5.26%
Increased workload	3	15.79%
Decreased workload	0	0.00%
Not applicable	3	15.79%
MRT Staffing Changes	Number of Respondents	Percent
No change	18	90.00%
Increase	2	10.00%
Decrease	0	0.00%
Do not know	0	0.00%
Change in MRT staffing FTE	Mean	Std Dev
	0.38	1.46

Total Vacancies across 33 facilities / multiple facilities offering this modality equals 33×0 (vacancy mean) = 0 FTEs.

Projected Net FTE Increases over the next three years for 33 facilities / multiple facilities offering this modality equals 33×0.38 (future mean) = 12.54 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

PET-MR

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	0	0
MRT Staff FTE Vacancies	Mean	Std Dev
	0	0

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	0	0.00%
0.01 - 9.99 % increase	0	0.00%
No change	4	100.00%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	0	0.00%
Facility modifications	0	0.00%
Funding changes	0	0.00%
MRT staffing	0	0.00%
Patient demographics	0	0.00%
Physician staffing	0	0.00%
Practice changes	0	0.00%
Increased workload	0	0.00%
Decreased workload	0	0.00%
Not applicable	0	0.00%
MRT Staffing Changes	Number of Respondents	Percent
No change	4	100.00%
Increase	0	0.00%
Decrease	0	0.00%
Do not know	0	0.00%
Change in MRT staffing FTE	Mean	Std Dev
	0	0

Total Vacancies across 8 facilities / multiple facilities offering this modality equals 8×0 (vacancy mean) = 0 FTEs.

Projected Net FTE Increases over the next three years for 8 facilities / multiple facilities offering this modality equals 8×0 (future mean) = 0 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

Magnetic Resonance

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	4.81	5.77
MRT Staff FTE Vacancies	Mean	Std Dev
	0.11	0.41

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	1	1.22%
10 - 19.99 % increase	6	7.32%
0.01 - 9.99 % increase	22	26.83%
No change	53	64.63%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	11	13.10%
Facility modifications	4	4.76%
Funding changes	16	19.05%
MRT staffing	4	4.76%
Patient demographics	7	8.33%
Physician staffing	3	3.57%
Practice changes	11	13.10%
Increased workload	23	27.38%
Decreased workload	0	0.00%
Not applicable	5	5.95%
MRT Staffing Changes	Number of Respondents	Percent
No change	68	82.93%
Increase	12	14.63%
Decrease	0	0.00%
Do not know	2	2.44%
Change in MRT staffing FTE	Mean	Std Dev
	0.36	1.03

Total Vacancies across 121 facilities / multiple facilities offering this modality equals 121×0.11 (vacancy mean) = 13.31 FTEs.

Projected Net FTE Increases over the next three years for 121 facilities / multiple facilities offering this modality equals 121×0.36 (future mean) = 43.56 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

Ultrasound / Sonography

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	19.72	150.81
MRT Staff FTE Vacancies	Mean	Std Dev
	0.35	0.89

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	2	1.57%
10 - 19.99 % increase	9	7.09%
0.01 - 9.99 % increase	31	24.41%
No change	80	62.99%
0.01 - 9.99 % decrease	2	1.57%
10 - 19.99 % decrease	1	0.79%
more than 20 % decrease	2	1.57%
Reasons for Change	Number of Respondents	Percent
Equipment change	7	5.30%
Facility modifications	10	7.58%
Funding changes	8	6.06%
MRT staffing	13	9.85%
Patient demographics	16	12.12%
Physician staffing	10	7.58%
Practice changes	18	13.64%
Increased workload	40	30.30%
Decreased workload	6	4.55%
Not applicable	4	3.03%
MRT Staffing Changes	Number of Respondents	Percent
No change	93	73.23%
Increase	23	18.11%
Decrease	3	2.36%
Do not know	8	6.30%
Change in MRT staffing FTE	Mean	Std Dev
	0.31	1.13

Total Vacancies across 172 facilities / multiple facilities offering this modality equals 172×0.35 (vacancy mean) = 60.20 FTEs.

Projected Net FTE Increases over the next three years for 172 facilities / multiple facilities offering this modality equals 172×0.31 (future mean) = 53.32 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

Echocardiology

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	1.32	2.66
MRT Staff FTE Vacancies	Mean	Std Dev
	0.14	0.47

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	4	4.82%
10 - 19.99 % increase	0	0.00%
0.01 - 9.99 % increase	11	13.25%
No change	67	80.72%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	1	1.20%
Reasons for Change	Number of Respondents	Percent
Equipment change	3	7.14%
Facility modifications	2	4.76%
Funding changes	3	7.14%
MRT staffing	5	11.90%
Patient demographics	6	14.29%
Physician staffing	3	7.14%
Practice changes	3	7.14%
Increased workload	14	33.33%
Decreased workload	1	2.38%
Not applicable	2	4.76%
MRT Staffing Changes	Number of Respondents	Percent
No change	70	84.34%
Increase	7	8.43%
Decrease	1	1.20%
Do not know	5	6.02%
Change in MRT staffing FTE	Mean	Std Dev
	0.07	0.29

Total Vacancies across 117 facilities / multiple facilities offering this modality equals 117×0.14 (vacancy mean) = 16.38 FTEs.

Projected Net FTE Increases over the next three years for 117 facilities / multiple facilities offering this modality equals 117×0.07 (future mean) = 8.19 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be 4.0 ± 3.0 ; that is, would range from +1.0 to +7.0

PACS

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	0.95	1.4
MRT Staff FTE Vacancies	Mean	Std Dev
	0.04	0.18

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	1	0.79%
0.01 - 9.99 % increase	9	7.14%
No change	114	90.48%
0.01 - 9.99 % decrease	2	1.59%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	7	10.00%
Facility modifications	9	12.86%
Funding changes	4	5.71%
MRT staffing	5	7.14%
Patient demographics	6	8.57%
Physician staffing	8	11.43%
Practice changes	8	11.43%
Increased workload	12	17.14%
Decreased workload	1	1.43%
Not applicable	10	14.29%
MRT Staffing Changes	Number of Respondents	Percent
No change	122	96.83%
Increase	1	0.79%
Decrease	1	0.79%
Do not know	2	1.59%
Change in MRT staffing FTE	Mean	Std Dev
	0	0.1

Total Vacancies across 173 facilities / multiple facilities offering this modality equals 173×0.04 (vacancy mean) = 6.92 FTEs.

Projected Net FTE Increases over the next three years for 173 facilities / multiple facilities offering this modality equals 173×0 (future mean) = 0 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be 4.0 ± 3.0 ; that is, would range from +1.0 to +7.0

Clinical Education

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	0.86	1.89
MRT Staff FTE Vacancies	Mean	Std Dev
	0	0.03

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	0	0.00%
0.01 - 9.99 % increase	2	2.90%
No change	67	97.10%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	1	6.25%
Facility modifications	1	6.25%
Funding changes	1	6.25%
MRT staffing	2	12.50%
Patient demographics	1	6.25%
Physician staffing	1	6.25%
Practice changes	1	6.25%
Increased workload	2	12.50%
Decreased workload	0	0.00%
Not applicable	6	37.50%
MRT Staffing Changes	Number of Respondents	Percent
No change	67	97.10%
Increase	0	0.00%
Decrease	1	1.45%
Do not know	1	1.45%
Change in MRT staffing FTE	Mean	Std Dev
	-0.01	0.49

Total Vacancies across 100 facilities / multiple facilities offering this modality equals 100×0 (vacancy mean) = 0 FTEs.

Projected Net FTE Increases over the next three years for 100 facilities / multiple facilities offering this modality equals 100×-0.01 (future mean) = -1 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

Research

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	0.19	0.49
MRT Staff FTE Vacancies	Mean	Std Dev
	0	0

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	0	0.00%
0.01 - 9.99 % increase	1	2.70%
No change	36	97.30%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	0	0.00%
Facility modifications	0	0.00%
Funding changes	0	0.00%
MRT staffing	0	0.00%
Patient demographics	1	16.67%
Physician staffing	1	16.67%
Practice changes	1	16.67%
Increased workload	1	16.67%
Decreased workload	0	0.00%
Not applicable	2	33.33%
MRT Staffing Changes	Number of Respondents	Percent
No change	37	100.00%
Increase	0	0.00%
Decrease	0	0.00%
Do not know	0	0.00%
Change in MRT staffing FTE	Mean	Std Dev
	0	0

Total Vacancies across 58 facilities / multiple facilities offering this modality equals 58 x 0 (vacancy mean) = 0 FTEs.

Projected Net FTE Increases over the next three years for 58 facilities / multiple facilities offering this modality equals 58 x 0 (future mean) = 0 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be 4.0 + or - 3.0; that is, would range from +1.0 to +7.0

Professional Practice

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	0.7	1.44
MRT Staff FTE Vacancies	Mean	Std Dev
	0	0

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	0	0.00%
0.01 - 9.99 % increase	0	0.00%
No change	40	100.00%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	0	0.00%
Facility modifications	0	0.00%
Funding changes	0	0.00%
MRT staffing	1	12.50%
Patient demographics	0	0.00%
Physician staffing	0	0.00%
Practice changes	1	12.50%
Increased workload	0	0.00%
Decreased workload	0	0.00%
Not applicable	6	75.00%
MRT Staffing Changes	Number of Respondents	Percent
No change	39	97.50%
Increase	0	0.00%
Decrease	0	0.00%
Do not know	1	2.50%
Change in MRT staffing FTE	Mean	Std Dev
	0	0

Total Vacancies across 60 facilities / multiple facilities offering this modality equals 60 x 0 (vacancy mean) = 0 FTEs.

Projected Net FTE Increases over the next three years for 60 facilities / multiple facilities offering this modality equals 60 x 0 (future mean) = 0 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be 4.0 + or - 3.0; that is, would range from +1.0 to +7.0

Quality Control / Quality Improvement

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	0.64	1.13
MRT Staff FTE Vacancies	Mean	Std Dev
	0.02	0.14

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	0	0.00%
0.01 - 9.99 % increase	5	4.55%
No change	105	95.45%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	3	7.50%
Facility modifications	4	10.00%
Funding changes	2	5.00%
MRT staffing	5	12.50%
Patient demographics	2	5.00%
Physician staffing	2	5.00%
Practice changes	6	15.00%
Increased workload	5	12.50%
Decreased workload	0	0.00%
Not applicable	11	27.50%
MRT Staffing Changes	Number of Respondents	Percent
No change	104	94.55%
Increase	3	2.73%
Decrease	0	0.00%
Do not know	3	2.73%
Change in MRT staffing FTE	Mean	Std Dev
	0.01	0.08

Total Vacancies across 154 facilities / multiple facilities offering this modality equals 154×0.02 (vacancy mean) = 3.08 FTEs.

Projected Net FTE Increases over the next three years for 154 facilities / multiple facilities offering this modality equals 154×0.01 (future mean) = 1.54 FTEs.

Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be 4.0 ± 3.0 ; that is, would range from +1.0 to +7.0

Radiation Therapy, General

CURRENT Human Resource Profile

This section will determine the current status of the Human Resource profile for various locations.

MRT Staff FTE	Mean	Std Dev
	47.56	40.51
MRT Staff FTE Vacancies	Mean	Std Dev
	0.57	1.03

FUTURE CHANGES to the Human Resource Profile

This section gathers data on any anticipated changes in the next 1 to 3 years that may occur in the Human Resource profile for various locations.

Changes in Service Volume	Number of Respondents	Percent
more than 20 % increase	0	0.00%
10 - 19.99 % increase	3	11.11%
0.01 - 9.99 % increase	19	70.37%
No change	5	18.52%
0.01 - 9.99 % decrease	0	0.00%
10 - 19.99 % decrease	0	0.00%
more than 20 % decrease	0	0.00%
Reasons for Change	Number of Respondents	Percent
Equipment change	7	12.73%
Facility modifications	2	3.64%
Funding changes	0	0.00%
MRT staffing	3	5.45%
Patient demographics	13	23.64%
Physician staffing	4	7.27%
Practice changes	8	14.55%
Increased workload	16	29.09%
Decreased workload	0	0.00%
Not applicable	2	3.64%
MRT Staffing Changes	Number of Respondents	Percent
No change	9	33.33%
Increase	11	40.74%
Decrease	1	3.70%
Do not know	6	22.22%
Change in MRT staffing FTE	Mean	Std Dev
	1.11	1.69

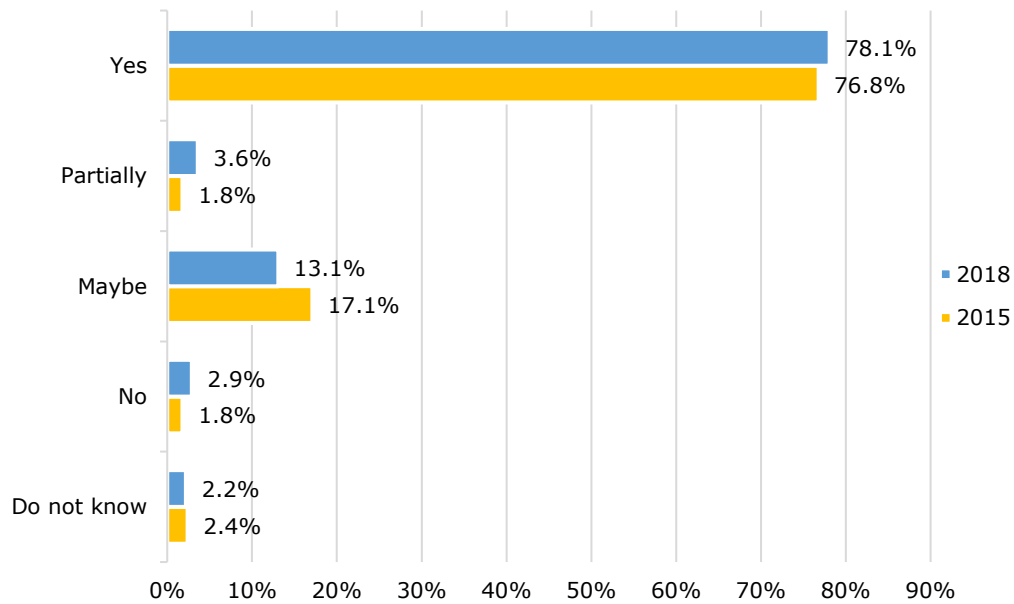
Total Vacancies across 30 facilities / multiple facilities offering this modality equals 30×0.57 (vacancy mean) = 17.1 FTEs.

Projected Net FTE Increases over the next three years for 30 facilities / multiple facilities offering this modality equals 30×1.11 (future mean) = 33.3 FTEs.

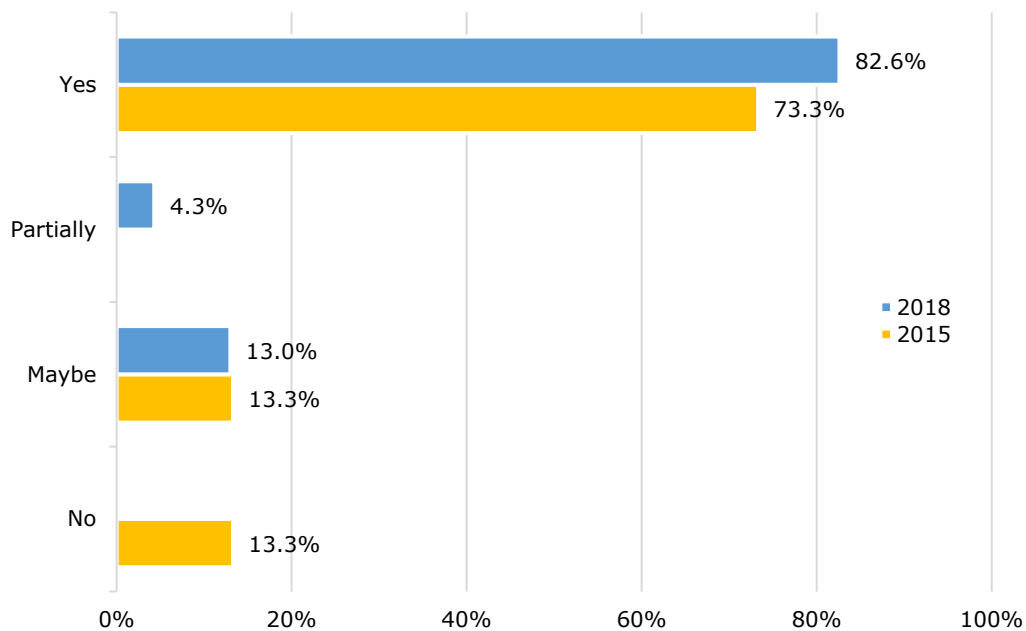
Mean and Standard Deviation (STD): the mean is the average of all the responses, and the STD includes the range for 68% of all the responses. For example, if the mean was 4.0 and the STD was 3.0, then the range would be $4.0 + \text{or} - 3.0$; that is, would range from +1.0 to +7.0

Would MRT staff be replaced when: Retiring?

Medical Imaging



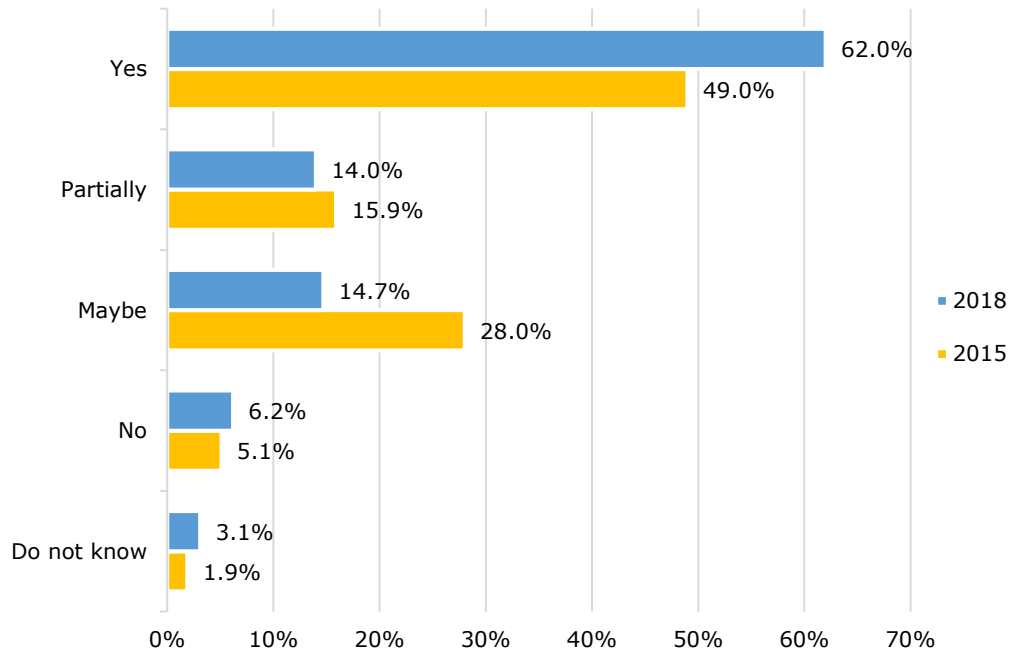
Radiation Therapy



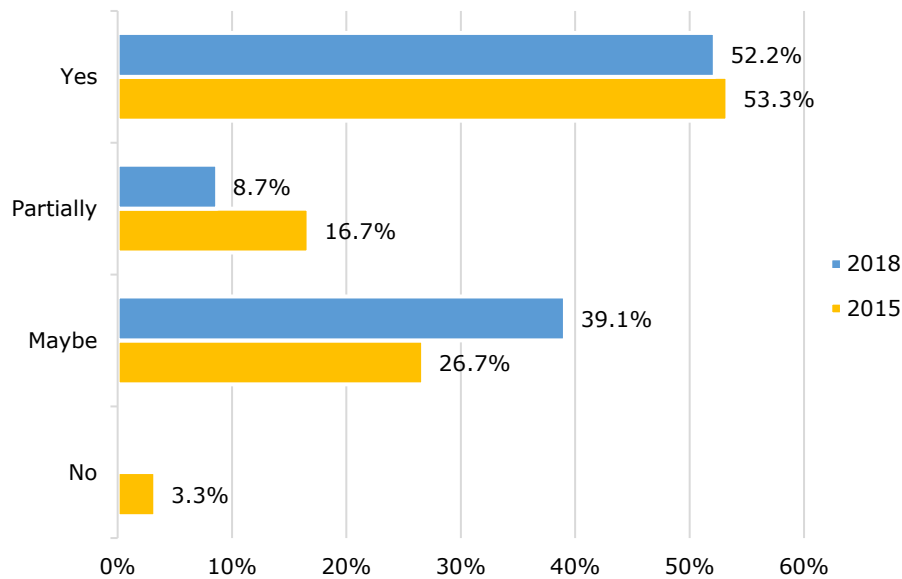
The percent of staff that would be replaced for a retirement was approximately the same across both surveys and for both MI and RT.

Would MRT staff be replaced when: On leave?

Medical Imaging



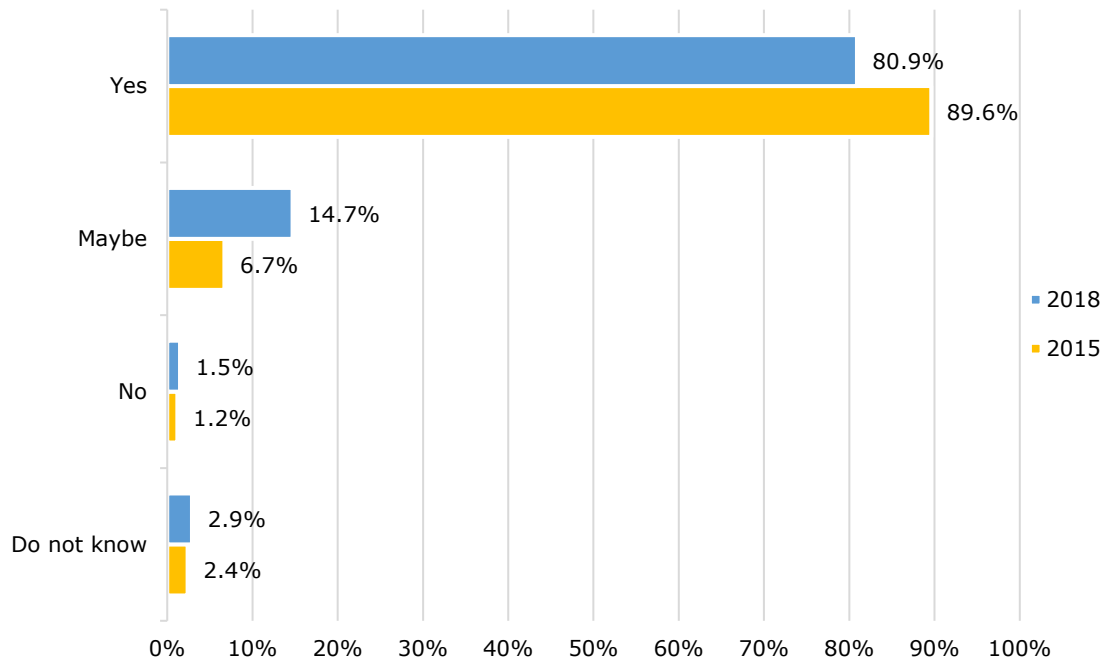
Radiation Therapy



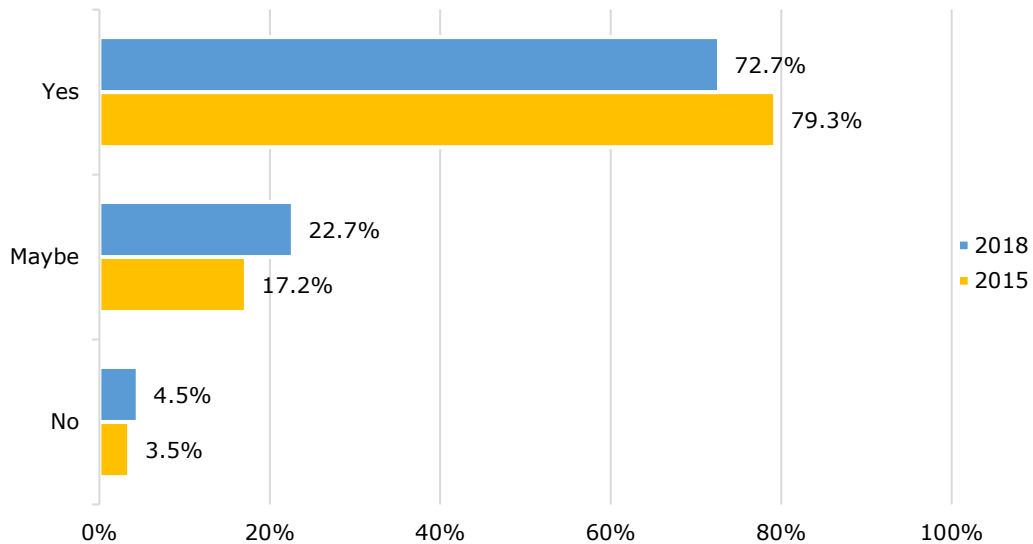
For both MI and RT, the results were similar, with “yes” being the most frequent answer across both surveys, though in the 2018 survey in RT there was not a response in the “no” category.

If increasing or replacing MRT staff, would you consider hiring a/an: Experienced MRT from another Canadian facility?

Medical Imaging



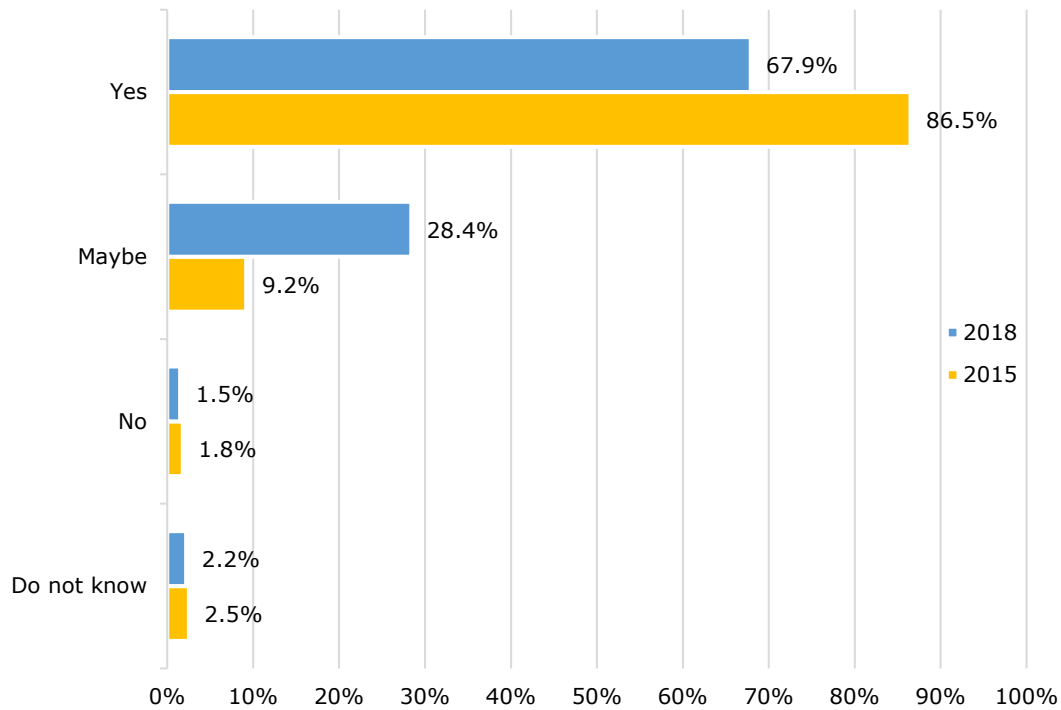
Radiation Therapy



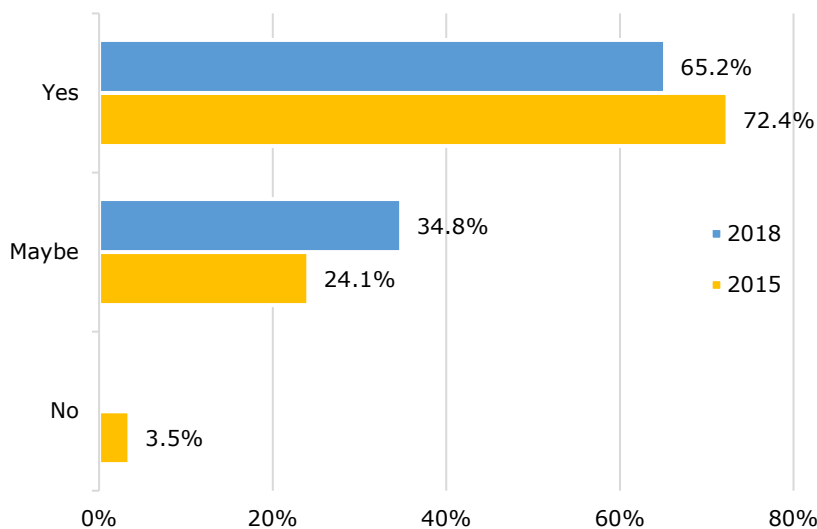
For both MI and RT, the results were similar across both surveys, with “yes” being by far the most common response.

If increasing or replacing MRT staff, would you consider hiring a/an: New Canadian MRT graduate?

Medical Imaging



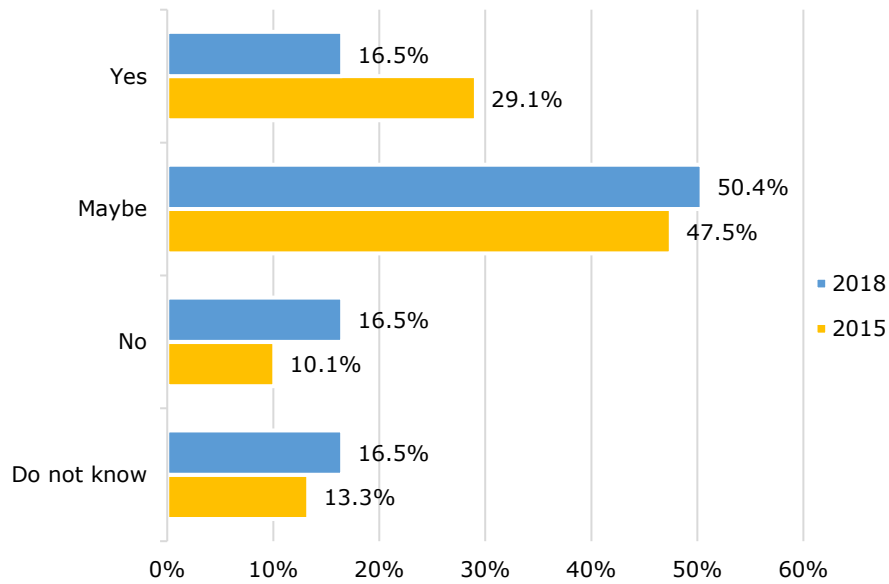
Radiation Therapy



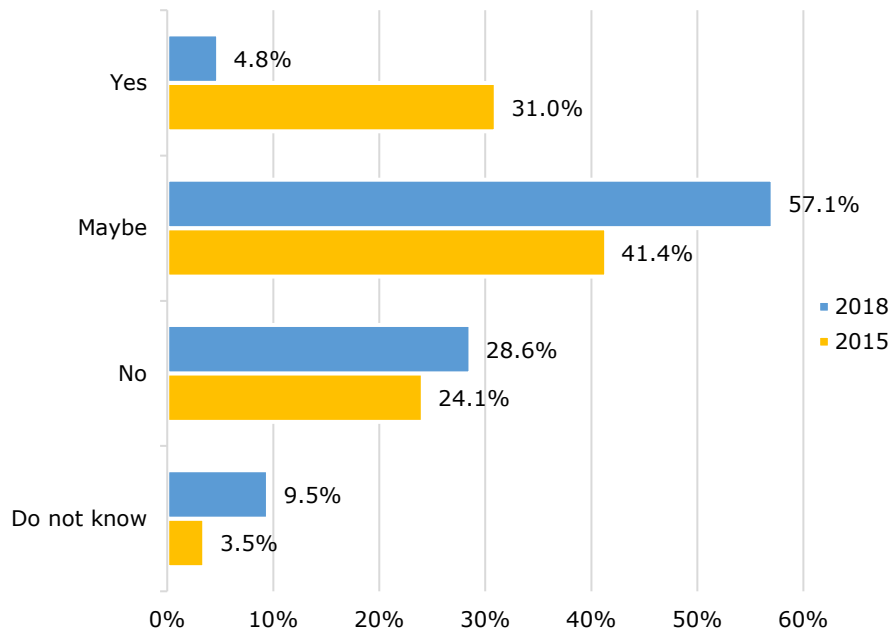
For both MI and RT, the responses were similar across both surveys, though the “yes” response was less pronounced for both disciplines in the 2018 survey compared to the one in 2015.

**If increasing or replacing MRT staff, would you consider hiring a/an:
Internationally educated MRT?**

Medical Imaging



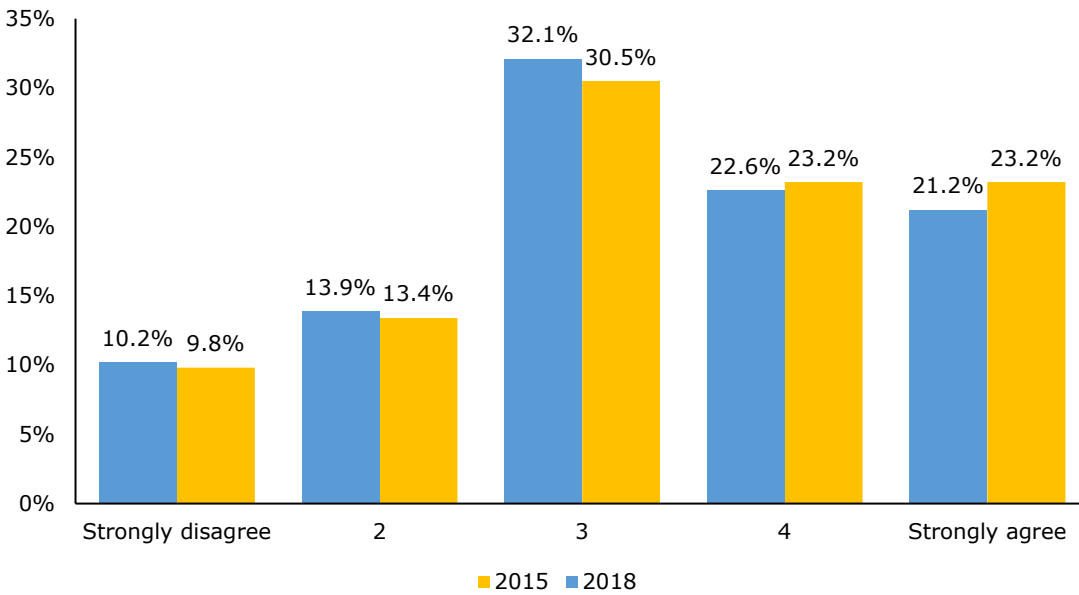
Radiation Therapy



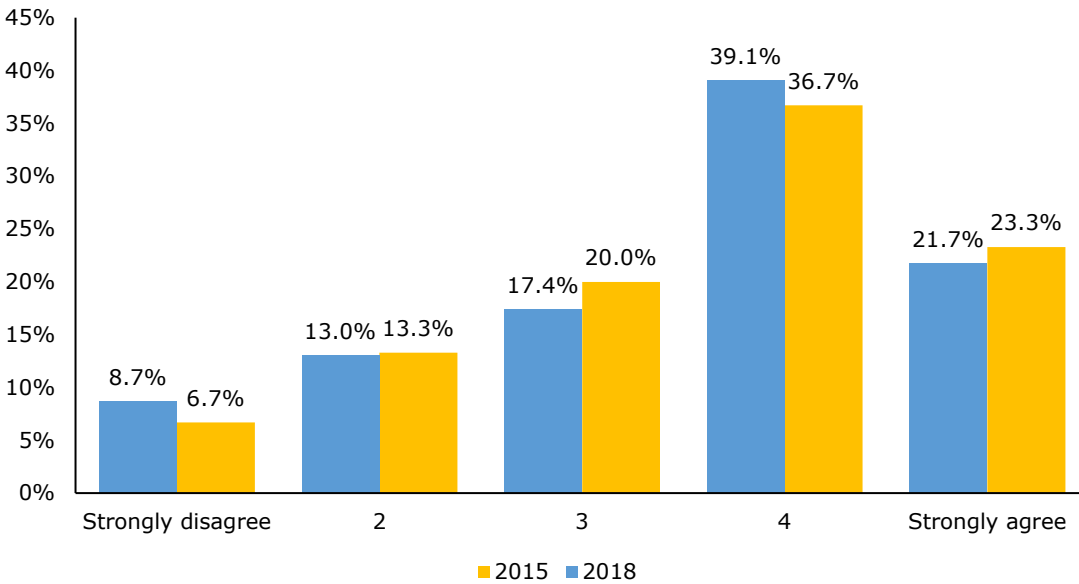
For both MI and RT, the responses were similar across both surveys, though the “maybe” responses in MI and RT were more pronounced in the 2018 survey compared to the 2015 one and the “yes” responses were more pronounced in MI and RT in the 2015 survey compared to the 2018 one.

When you hire new staff, you prefer to hire staff who have training in multiple modalities.

Medical Imaging



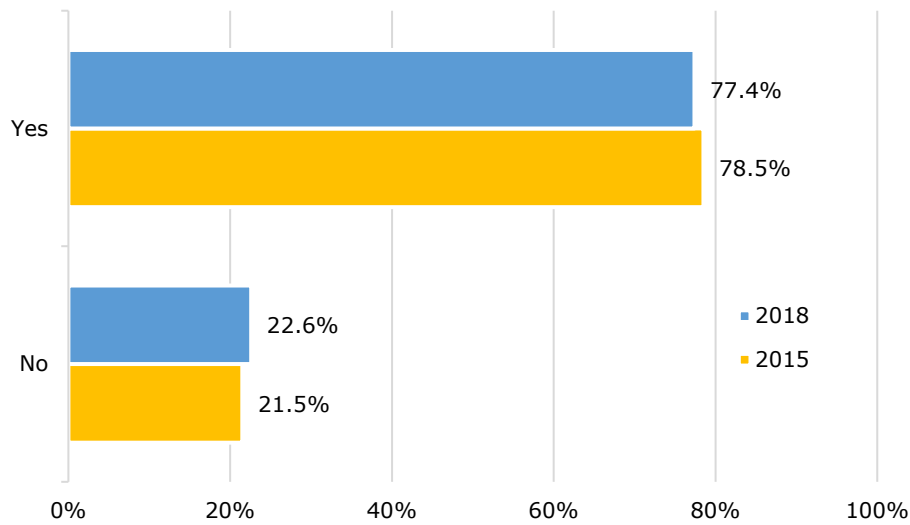
Radiation Therapy



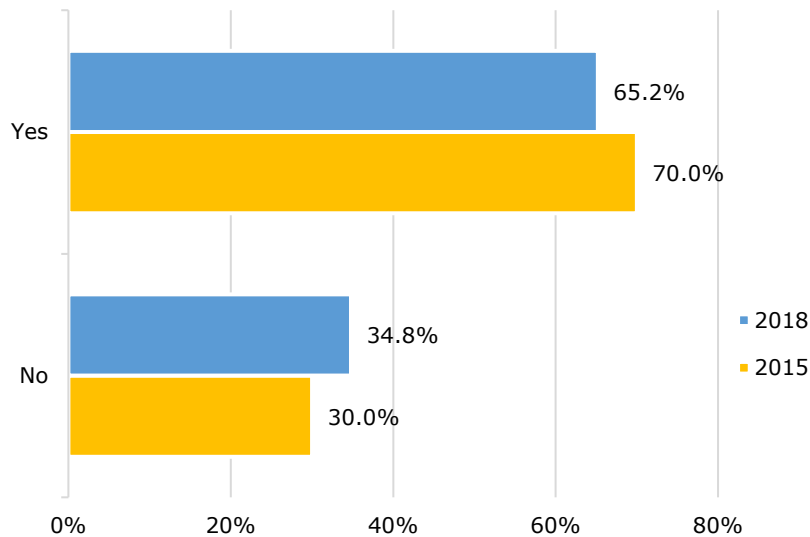
RT were more likely than MI to prefer to hire staff who have training in multiple modalities; otherwise the two survey results were similar.

Do you feel your current staffing levels are adequate?

Medical Imaging

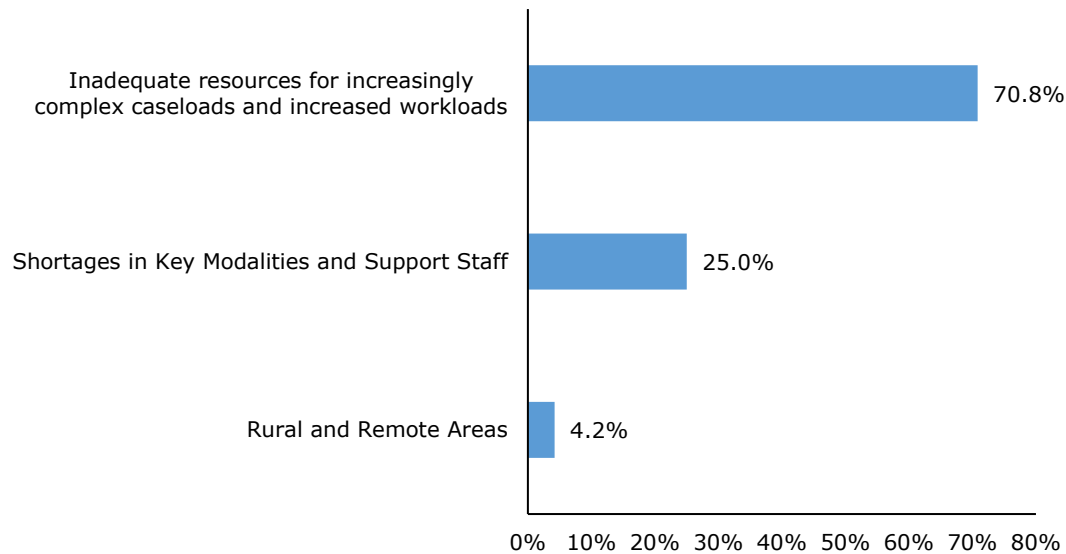


Radiation Therapy



Generally, MI were slightly more likely to feel that their current staffing levels were adequate compared to RT, and this trend was consistent across the two surveys.

If no, please provide one or two reasons why it isn't adequate?



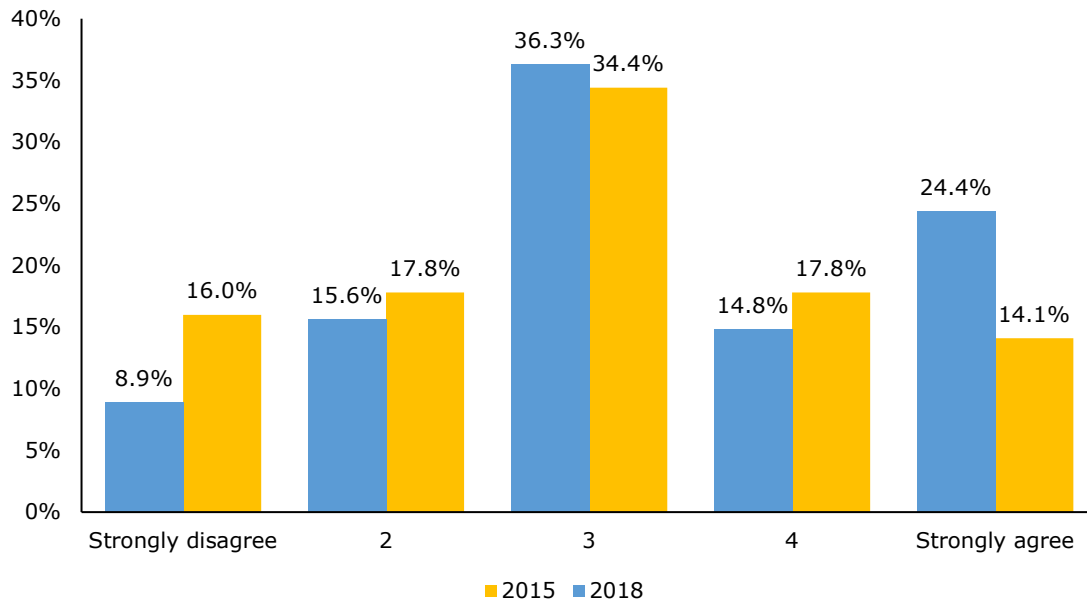
Inadequate resources for increasingly complex caseloads and increased workloads (34 comments)—including, for example, understaffed for the workflow and unable to meet daily demands especially from the operating suites; even with a number of retirements on the horizon all changes are expected to be completed within existing resources; if there are sick calls there are times when I have to close the CTsim completely; due to budget cuts I had to cut 1 x-ray tech this year and may have to cut another in the upcoming budget year; increasing volumes are leading to increasing wait times; Ontario funding is based on new patients and not on complexity; it's hard to determine optimal levels as practice is in flux and increasingly affected by automation and artificial intelligence; and the volume of exams is constantly increasing and the exams are more difficult to administer because of the age of patients.

Shortages in Key Modalities and Support Staff (12 comments)—including, for example, even though we have an adequate staffing level of technologists we have no support staff; the time for training across modalities makes it such that we feel always short of staff; due to the changes in the public healthcare system in Quebec there are not enough Ultrasound Technologists; Ultrasound technology is not a coveted radiology discipline for students; many choose to focus on MRI, CT, PET-CT, etc.; we are experiencing a critical shortage of qualified sonographers; there is a shortage of US techs to hire; and there is a lack of ultrasound technologists.

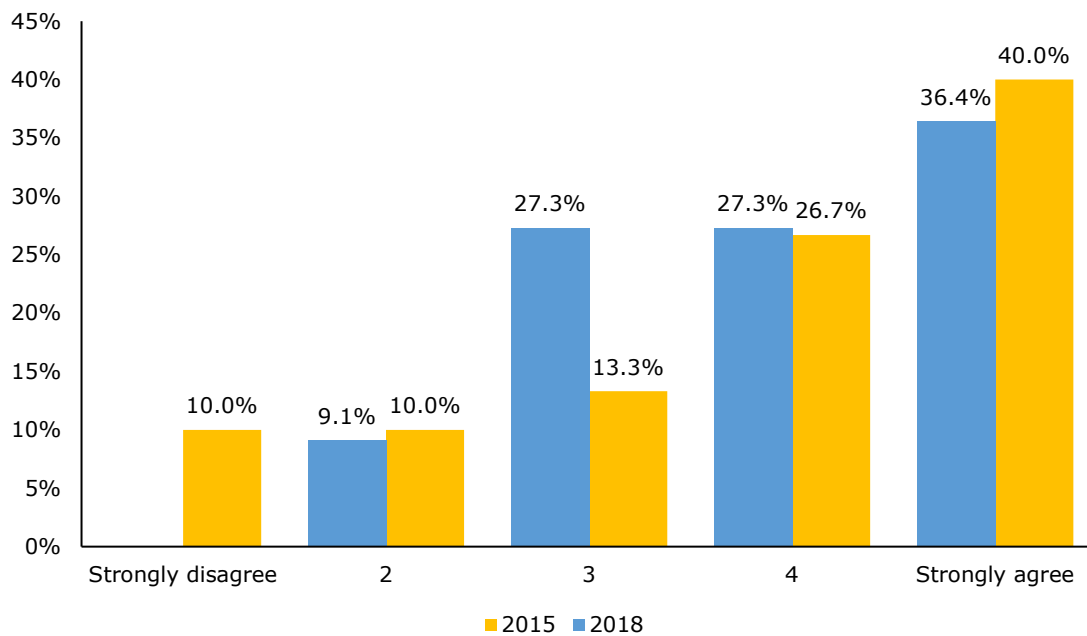
Rural and Remote Areas (2 comments)—including, for example, relief staff work multiple sites and departments therefore availability is very limited for rural hospitals; and recruitment and retention has been an ongoing challenge as Saskatchewan does not have a dedicated training program within the province.

Temporary leaves -- maternity and short-term leaves of absence -- are common in my department.

Medical Imaging



Radiation Therapy



Temporary leaves were more common in RT compared to MI, and this trend was consistent across the two surveys.

How many of your staff will be eligible to retire in 5 or 10 years?

	5 years			10 years		
	N	Mean	STD	N	Mean	STD
Medical Imaging	130	3.87	4.36	120	5.50	7.44
Radiation Therapy	23	5.57	5.57	23	8.74	7.26

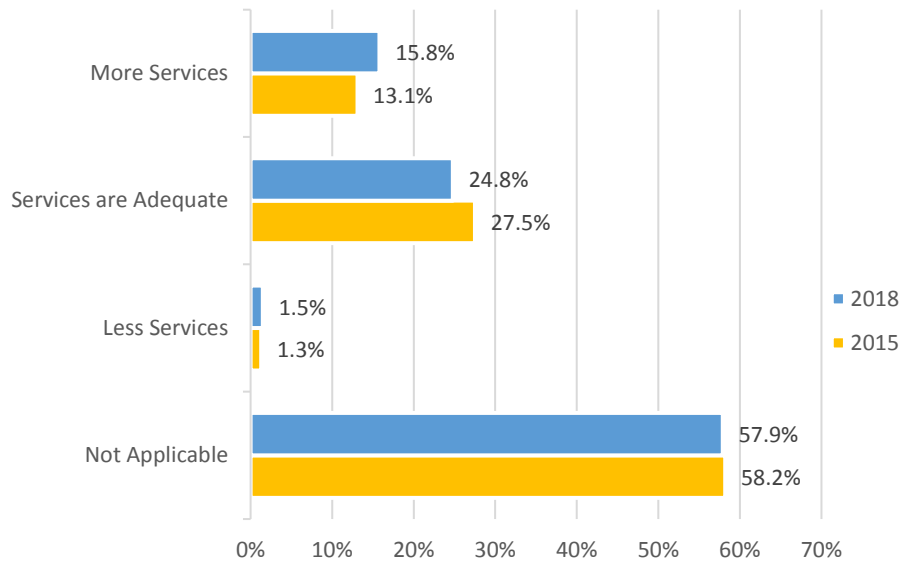
How many of those above who you indicated were eligible to retire, do you believe will in fact retire in 5 and 10 years?

	5 years			10 years		
	N	Mean	STD	N	Mean	STD
Medical Imaging	127	2.91	3.10	116	3.91	5.16
Radiation Therapy	22	3.09	2.49	22	5.09	4.19

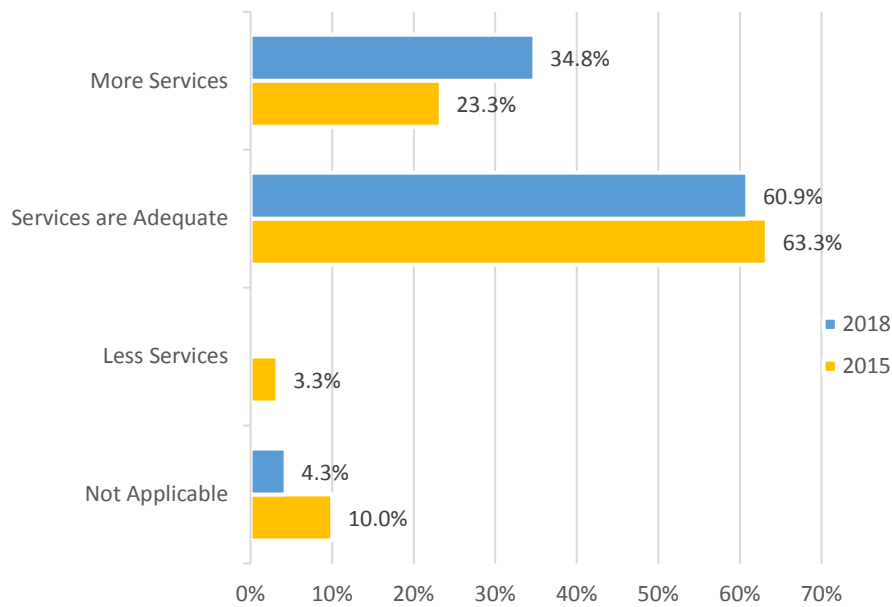
Note for these two questions, the responses of MI and RT were quite consistent: The respondents believe there will in fact be quite a few retirements over 5 and 10 years.

You may have nursing staff who play a vital supporting role assigned to your department. If you do, in terms of these supporting services, do you feel you need:

Medical Imaging

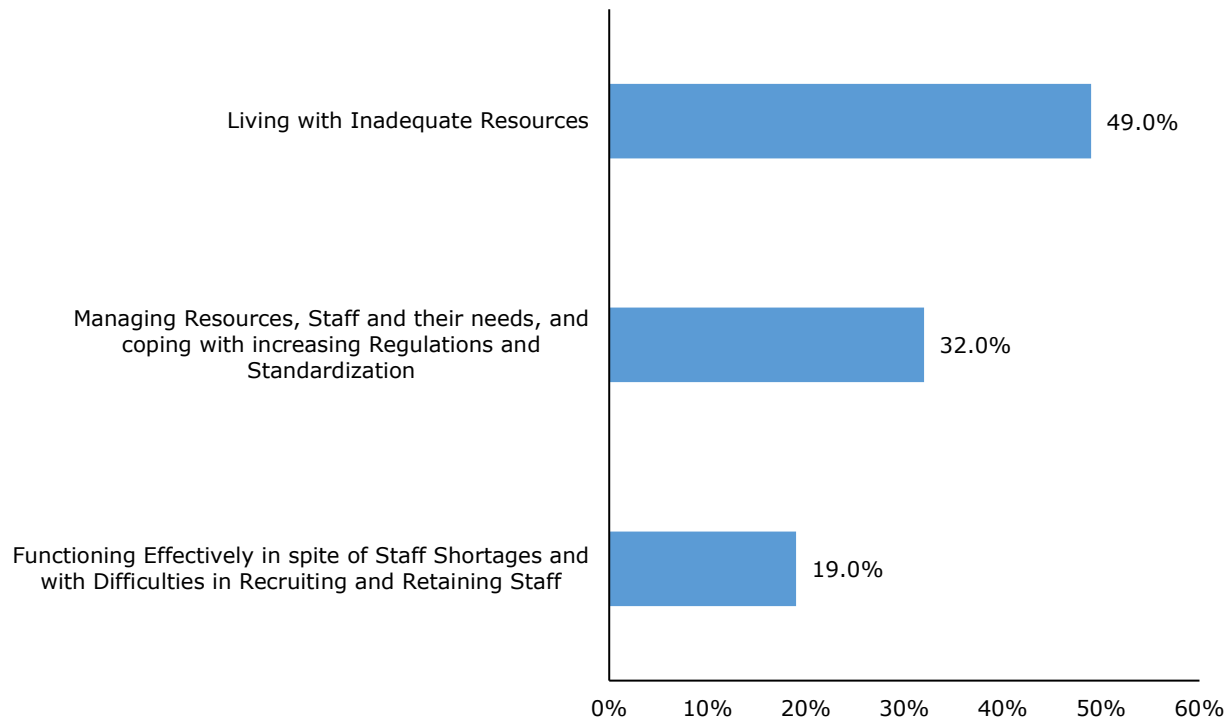


Radiation Therapy



This graph confirms that nursing services were largely not applicable in MI, but much less so in RT. RT reported that nursing support services were adequate considerably more often than MI. These trends were consistent across both surveys.

In your MRT leadership role, what are the one or two problems or obstacles that concern you most?



Living with Inadequate Resources (75 comments)—including, for example, lack of stable funding; older buildings and sites have so many restrictions on where things can go; increasing demands for service and difficulty in obtaining funding to replace equipment; not enough equipment; loss of autonomy due to budget restrictions; positions not being filled due to mat leaves and retirement; not getting administrative help with increased workload and with getting clerks and booking clerks; not enough slots for all the different stakeholders wanting MRI scans; training budget is inadequate; staffing short term leaves such as sick time; hiring staff on a casual basis to relieve for holidays and maternity leaves; capital funding, budget cuts, workload; recruiting to a rural site is difficult especially when the FTE is lower; costs associated with staff illness, leaves and contracts; keeping up with new technologies; with increased patient volumes and reduced budgets it is currently manageable due to the casual pool but it is impossible to routinely cross-train staff; funding for staff education; workloads well above normal levels; increasing need for nursing support; increased cost of IR medical / surgical supplies; and resources often not allocated for the constant changes.

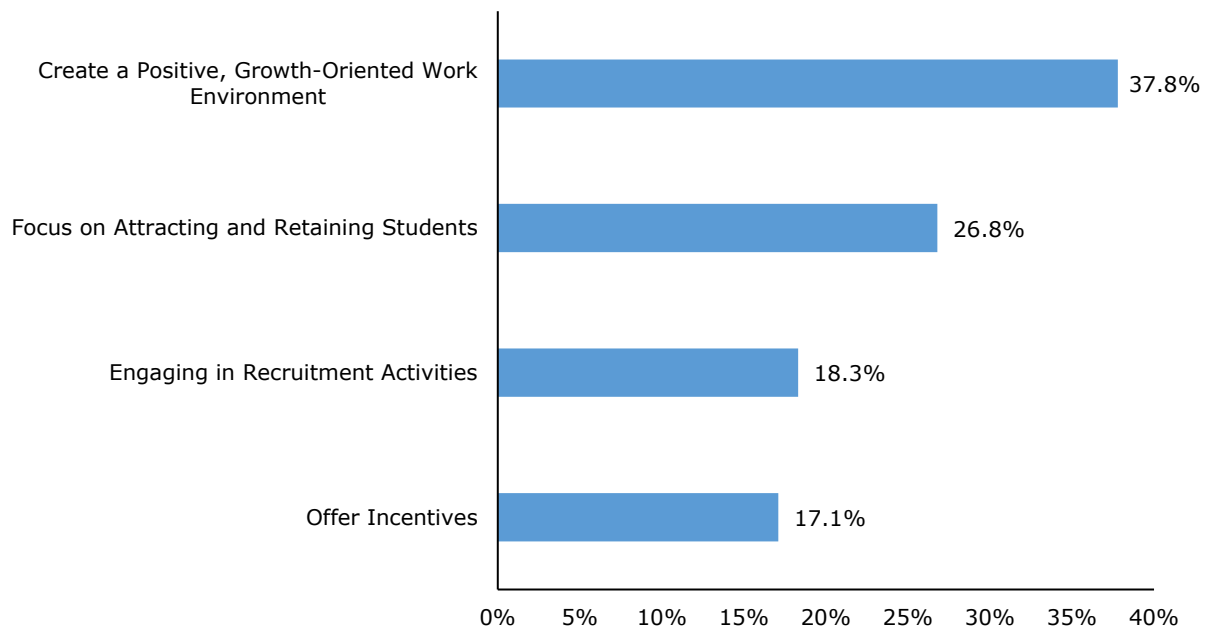
Managing Resources, Staff and their needs, and coping with increasing Regulations and Standardization (49 comments)—including, for example, ultrasound regulation and standardization of professional requirements to hire; skill sets and cross training; keeping up with current standards of practice for technical and safety issues; loss of scope due to other professions creeping in and the union holding back staff from expanding their roles; next generation’s lack of commitment to the job; attitude of entitlement; mental issues with staff; staff engagement and satisfaction; more standardization of systems across Ontario; staffing for high vacation times; staff burnout and low morale; retaining casual staff in a rural setting; MRT staff without initiative to try

new challenges; lack of focus on attentiveness to job and use of cell phones by new young staff members; maintaining high level of staff engagement in patient care and quality imaging; staff accountability; concern about the number of staff retirements in the next 10 years and the impact of a significant change in staffing during the transition; staff complainers and negative attitudes; the ability of staff to come and go and not be contractually bound to a posting; changes in healthcare policy; and balancing staff workload to continue delivering high quality care safely with so much change, innovation and learning happening.

Functioning Effectively in spite of Staff Shortages and with Difficulties in

Recruiting and Retaining Staff (29 comments)—including, for example, recruitment of ultrasound technologists has been a challenge for many years and continues to be the case here as well as in other organizations; the availability of technologists to fill vacancies when they arise; PACs and archiving; retaining staff trained in dosimetry or brachytherapy and having them to retrain new staff; inability to recruit for ultrasound; retention and recruitment issues directly affected by funding; retaining casual employees in a rural setting; recruitment of MRT staff and sonographers to smaller urban sites; difficulties to find part-time staff; staff retention and recruitment; recruitment outside of larger centres; and finding replacement staff for some modalities.

Do you have one or two recruitment and/or retention activities that you can share?



Create a Positive, Growth-Oriented Work Environment (31 comments)—including, for example, encourage / support education; participation in associations and colleges; work-life balance is a must for keeping staff happy and wanting to stay; treat your staff like you would like to be treated; respect your staff and the expertise they bring to the table; it is important to engage staff in the decision-making process and to work collaboratively

towards common goals, recognizing local resource limitations; engage in staff appreciation activities; support flexible self-scheduling where possible; try creating FT (full time) positions where possible; engage in cross-modality training; support professional development needs by sending staff to lectures, meetings and conferences; be as fair and consistent as possible when dealing with staff; employ anti-bully strategies; and seek methods and opportunities for engaging staff.

Focus on Attracting and Retaining Students (22 comments)—including, for example, associate with colleges and universities for student placement; students are a good source of recruitment provided they are from your area; attend school job fairs where current staff spread the word which provides built-in advertising; try to hire as many of our students as possible (usually in contract positions to start); we provide clinical placement each year and have benefited from having our students available to work following graduation and successful completion of CAMRT certification exam; our biggest recruitment capture is from the students that train at our facilities; consistently taking many students; and to hire the MRT personnel we interview from the graduating class each year.

Engaging in Recruitment Activities (15 comments)—including, for example, promoting the profession at career fairs; attend SAIT fairs; post needs on the Health Authorities website and pick from the applicants; our radiologists help recruit staff from the different facilities they work at; we are currently planning a recruitment day for our hospital to include multiple types of hires including MRTs; post on the website "Santé Montréal"; and on PEI we focus on those folks who have family connections here because that is what has proved to be the most successful strategy in the past.

Offer Incentives (14 comments)—including, for example, we offer education funds to assist potential applicants which is a bonus; pay for moving expenses and offering a signing bonus for a two-year work commitment; student bursaries with return of service requirements have helped to acquire staff and most have stayed; usually offer casual or temporary positions to attract new graduates; and with an offer of a \$30,000 education sponsorship for a three-year commitment we were able to recruit a new graduate from Ontario.

Do you have one or two suggestions for improving this survey?

The most common response to this question was that no changes needed to be made or that the survey was fine the way it was (22 responses).

There were, however, still a fair number of suggestions about how to improve the survey. One that we will implement for the next version of this survey is to spell out abbreviations more to assist the survey respondents.

For the other suggestions, the director of Professional Practice along with his staff and the surveyors will meet to decide what final changes will be made to the next version of this survey.

It is the intention of the Department of Professional Practice and the surveyors to continually improve this survey so that it provides the most accurate and useful information to the broad MRT community.

Finally, we would like to thank all those survey respondents who provided feedback on how to improve this survey. Your input is most helpful and appreciated.

Recommendations

1. Evolution and Credibility

Having developed a population for this survey has enabled us to provide a percentage for response rates and more importantly confidence limits for the survey results for both Medical Imaging and Radiation Therapy. It will be important, therefore, to continue to keep the population for the CAMRT Human Resources survey as current and as accurate as possible. This will help ensure that our survey results are accurate and reliable.

It will also continue to be vitally important to pilot this survey on a regular basis to ensure that the survey is as user-friendly and effective as possible. This process will ensure that the survey is of an appropriate length which will lead to continued excellent response rates. This feature is important because longer surveys result in poorer response rates which negatively affect confidence limits.

The best way to keep the CAMRT Human Resources survey short enough to keep our response rate high is to consider using short targeted complementary surveys when needed. These brief complementary surveys can be used to address specific topics that need to be undertaken in either Medical Imaging or Radiation Therapy. Using this process ensures that we will continue to receive excellent response rates.

2. Frequency

Because of the rapid changes in technology and automation, I believe that these surveys should be repeated every two years. This will enable CAMRT to provide timely and accurate information to meet the needs of the full CAMRT community, including students and prospective members.

3. Communication

How the results of the CAMRT surveys are communicated is vitally important. The survey results need to be made available to all members and prospective members. However, this is not enough. Few members and prospective members will read though the full survey report and again few who do will fully appreciate the significance of the results.

It is important, therefore, not only to provide access to the full survey report but also to provide regular updates from the results and follow-ups. These follow-up reports should be short and focused on one issue at a time. Ideally, each of these updates should include a graph or picture. Articles with pictures or graphics are much more likely to be read and also much more likely to be understood.

Communicating regularly in this manner ensures that more members and prospective members will get the information they need to effectively plan their careers as MRTs.

Importantly, communicating the results of these Human Resources surveys helps to demonstrate to members and prospective members the vital role CAMRT continues to play in their professional lives.

Appendix

CAMRT 2018 Human Resources Survey Questionnaire

2018 CAMRT Human Resources Survey

To begin the survey, please indicate whether your MRT department is characterized as:*

Medical Imaging Radiation Therapy

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

DEMOGRAPHICS - HR Management

This section will determine demographics for Human Resource management.

Are you responsible for making Human Resource decisions in recruitment and retention?

- Yes
- No

What title most accurately describes your current position?

- Director
- Manager
- Charge/Senior/Team Leader Technologist
- Other

What is your gender?

- Female
- Male

What age group are you in?

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

DEMOGRAPHICS - Various Locations

This section will determine demographics for various locations.

Which province/territory do you work in?

What is the population of the city/town/catchment area you work in?

- Less than 10,000
- 10,000 to 99,999
- 100,000 to 999,999
- 1,000,000 or more

Definitions:

A **facility** is a building where the various MRT services are provided and where these services may be offered in more than one location within this building.

Multiple facilities are two or more buildings where the various MRT services are provided and where these services may be offered in more than one location within these buildings.

Are you reporting for

- A Facility
- Multiple Facilities

How is your facility / multiple facilities funded?

- Publicly
- Privately
- Publicly and privately

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Medical Imaging Modalities

For the modalities below, please indicate whether or not each of these modalities is provided by your facility / multiple facilities:

Radiological Technology / OR* Yes No

Computed Tomography* Yes No

Angiography / Interventional* Yes No

Electrophysiology / Cardiac Cath* Yes No

Mammography* Yes No

Bone Mineral Densitometry* Yes No

Nuclear Medicine* Yes No

Cyclotron* Yes No

PET-CT* Yes No

PET-MR* Yes No

Magnetic Resonance* Yes No

Ultrasound / Sonography* Yes No

Echocardiology* Yes No

PACS* Yes No

Clinical Education* Yes No

*includes MRTs who dedicate their time to train and educate students as a primary job responsibility, such as clinical instructors; however, does not include MRTs who perform clinical preceptorships as part of their duties.

Research* Yes No

Professional Practice* Yes No

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

*includes MRTs who dedicate their time setting operational standards at a local, regional or provincial level, such as professional practice leads; however, does not include MRTs who act in a charge technologist/therapist or team lead role.

Quality Control / Quality Improvement* Yes No

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Radiological Technology / OR

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile for in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Computed Tomography

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Angiography / Interventional

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Electrophysiology/Cardiac Cath

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

Reasons for change

- Equipment change
- Facility modifications
- Funding changes
- MRT staffing
- Patient demographics
- Physician staffing
- Practice changes
- Increased workload
- Decreased workload
- Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Mammography

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Bone Mineral Densitometry

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Nuclear Medicine

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Cyclotron

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

PET-CT

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

Reasons for change

- Equipment change
- Facility modifications
- Funding changes
- MRT staffing
- Patient demographics
- Physician staffing
- Practice changes
- Increased workload
- Decreased workload
- Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

PET-MR

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile for in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Magnetic Resonance

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

Reasons for change

- Equipment change
- Facility modifications
- Funding changes
- MRT staffing
- Patient demographics
- Physician staffing
- Practice changes
- Increased workload
- Decreased workload
- Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Ultrasound / Sonography

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

Staff FTE

Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

Staffing Changes

Change in staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Echocardiology

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

PACS

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Clinical Education *

* includes MRTs who dedicate their time to train and educate students as a primary job responsibility, such as clinical instructors; however, does not include MRTs who perform clinical preceptorships as part of their duties.

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Research

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Professional Practice *

* includes MRTs who dedicate their time setting operational standards at a local, regional or provincial level, such as professional practice leads; however, does not include MRTs who act in a charge technologist/therapist or team lead role.

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Quality Control / Quality Improvement

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Radiation Therapy, General

CURRENT Human Resource Profile

This section will determine the **current** status of the Human Resource profile in various locations.

MRT Staff FTE

MRT Staff FTE Vacancies

FUTURE CHANGES to the Human Resource Profile

This section will gather data on any anticipated changes **in the next 1 to 3 years** that may occur in the Human Resource profile in various locations.

Changes in service volume

- Reasons for change
- Equipment change
 - Facility modifications
 - Funding changes
 - MRT staffing
 - Patient demographics
 - Physician staffing
 - Practice changes
 - Increased workload
 - Decreased workload
 - Not applicable

MRT Staffing Changes

Change in MRT staffing FTE

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Brachytherapy

What are the current FTEs rotated or scheduled for this modality

In your estimation, over the next three years, what will be the change in FTE requirements for this modality?

- A Decrease Will remain the same An Increase

Dosimetry / Treatment Planning

What are the current FTEs rotated or scheduled for this modality

In your estimation, over the next three years, what will be the change in FTE requirements for this modality?

- A Decrease Will remain the same An Increase

External Beam Treatment

What are the current FTEs rotated or scheduled for this modality

In your estimation, over the next three years, what will be the change in FTE requirements for this modality?

- A Decrease Will remain the same An Increase

Simulation / Mold Room

What are the current FTEs rotated or scheduled for this modality

In your estimation, over the next three years, what will be the change in FTE requirements for this modality?

- A Decrease Will remain the same An Increase

Radiation Therapy, Advanced Practice

What are the current FTEs rotated or scheduled for this modality

In your estimation, over the next three years, what will be the change in FTE requirements for this modality?

- A Decrease Will remain the same An Increase

Clinical Education

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

What are the current FTEs rotated or scheduled for this modality

In your estimation, over the next three years, what will be the change in FTE requirements for this modality?

- A Decrease Will remain the same An Increase

Research

What are the current FTEs rotated or scheduled for this modality

In your estimation, over the next three years, what will be the change in FTE requirements for this modality?

- A Decrease Will remain the same An Increase

Professional Practice

What are the current FTEs rotated or scheduled for this modality

In your estimation, over the next three years, what will be the change in FTE requirements for this modality?

- A Decrease Will remain the same An Increase

Quality Control / Quality Improvement

What are the current FTEs rotated or scheduled for this modality

In your estimation, over the next three years, what will be the change in FTE requirements for this modality?

- A Decrease Will remain the same An Increase

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

Human Resource Recruitment & General

This section will gather data on methods and/or patterns of Human Resource recruitment and information from a few general questions.

Would MRT staff be replaced when:

	Yes	Partially	Maybe	No	Do not know
Retiring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On leave	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If increasing or replacing MRT staff, would you prefer hiring a/an:

	Yes	Maybe	No	Do not know
Experienced MRT from another Canadian facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New Canadian MRT graduate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internationally educated MRT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When you hire new staff, you prefer to hire staff who have training in multiple modalities.

Strongly disagree	2	3	4	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you feel your current staffing levels are adequate? Yes No

If no, please provide one or two reasons why it isn't adequate.

Temporary leaves -- MAT leaves and short-term leaves of absence -- are common in my department.

Strongly disagree	2	3	4	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many of your staff will be eligible to retire in 5 and 10 years?

5 years

10 years

How many of those above who you indicated were eligible to retire, do you believe will in fact retire in 5 and 10 years?

5 years

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10 years

On a scale from 1 to 10 with 1 indicating normal average caseloads to 10 indicating well-above the average number of urgent caseloads with ever-pressing timelines, where would you score your caseloads?

- 1 2 3 4 5 6 7 8 9 10

You may have nursing staff who play a vital supporting role assigned to your department. If you do, in terms of these supporting services, do you feel you need:

- Less Services
 Services are Adequate
 More Services
 Not Applicable

In your MRT leadership role, what are the one or two problems or obstacles that concern you most?

Do you have one or two recruitment and/or retention activities that you can share?

Do you have one or two suggestions for improving this survey?

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Please provide the information below because it is critical to the analysis of the data so that we can provide assistance where needed. Note: this information will be used for analysis **only** and will **not** be published.

Postal code of your facility / multiple facilities:*

Draw for Prizes

To be eligible for the draw for one of three prizes of \$100.00 gift cards (redeemable at a full-range of Canadian stores), please provide the following information.

Note: your name will not be used to identify any of your survey responses; only summary data will be presented in the survey report to guarantee confidentiality.

Email:

Name:

Telephone number:

Thank you for completing this survey. Please click the Submit button below.

<https://form.simplesurvey.com/f/s.aspx?s=e3724928-7dcd-4ce1-9ba0-2b143203fc4f&mo...> 04/03/2018

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