Human Resources Survey: Medical Imaging and Radiation Therapy

2017

CAMRT ACTRM

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

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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.

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

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.

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 Resource FTE Profile			CHANGES over the next three years for FTE requirements					
					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.

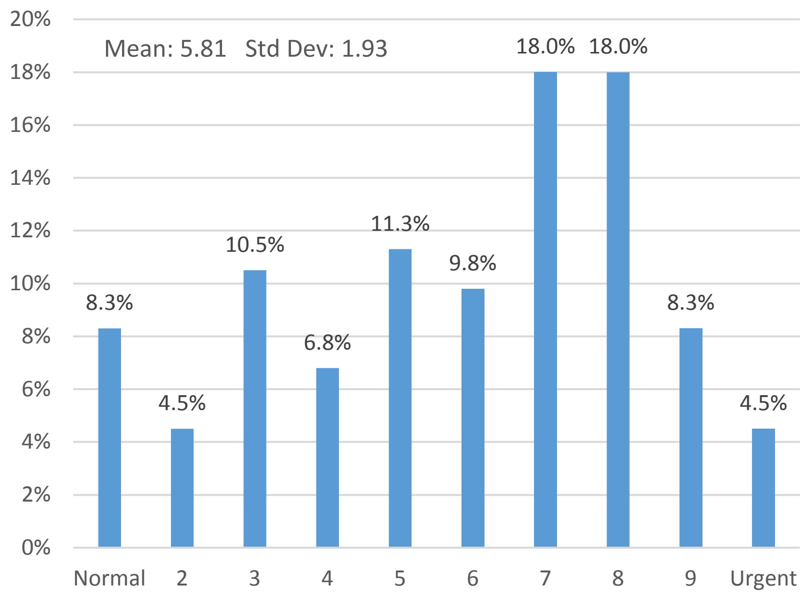
Key takeaways:

- 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).

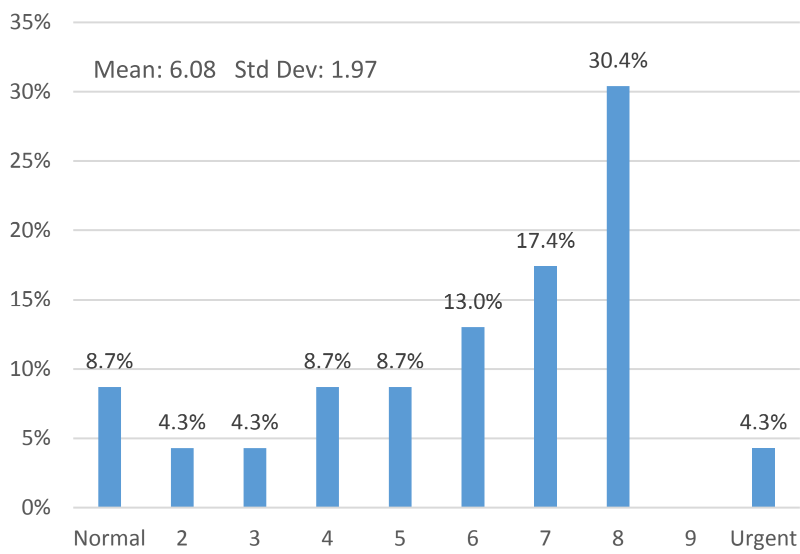
Projections for the appropriate balance between staffing and caseloads:

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.