



HEABC/HSPBA Recruitment  
and Retention Committee

**Recommendation Report:  
Diagnostic Medical  
Sonographers**

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Prepared for the Ministry of Health and the  
Public Sector Employers' Council  
August 31, 2016



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# Executive Summary

This report has been prepared by the Health Employers Association of BC/Health Science Professionals Bargaining Association Recruitment and Retention Committee (the “Committee”) for the purpose of providing its recommendations for addressing the shortage of Diagnostic Medical Sonographers in the BC public health sector. This report is submitted pursuant to the mandate described in the parties’ Memorandum of Understanding Re: Recruitment and Retention Committee<sup>1</sup>.

## 1.1 Overview of Diagnostic Medical Sonographer Shortage in BC

Sonographer shortages exist across Canada and in many jurisdictions globally. In BC, demand for sonographers has steadily increased each year, and the supply of professionals is not meeting this demand. In some health authorities, patients urgently needing exams are on waitlists for weeks and non-urgent cases may wait months for a sonogram. BC public sector health employers<sup>2</sup> project that demand will continue to increase, exacerbating the shortage of these professionals and putting patient care at risk. The sonography shortage in BC has reached a critical point.

## 1.2 Education

BCIT offers the only Diagnostic Medical Sonography Diploma program in the province. The program spans 27 months and enrolls a maximum of 30 students each year. Some health employers have used distance courses offered through The Burwin Institute of Diagnostic Medical Ultrasound to train their medical imaging technologists to perform ultrasound procedures (e.g. Northern Health Authority (“NHA”) has created its own Sonography Training at Rural Sites (“STARS”) program to expedite training NHA employees to perform sonography exams). It should be noted that graduates of the BCIT program are automatically entitled to write Sonography Canada certification exams, whereas Sonography Canada decides on a case-by-case basis whether graduates of other programs used in BC are permitted to write these exams. Most employers require their sonographers to be certified by Sonography Canada.

## 1.3 Compensation

The Sonographers’ recruitment and retention issue is primarily a wage issue. Wage and compensation disparities – between the public and private sectors as well as inter-provincially – were often cited

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<sup>1</sup> Appendix A

<sup>2</sup> For the purposes of this report, the terms “BC public sector health employers” and “Health Authorities” have the same meaning, are used interchangeably, and include affiliates and all employers covered by the HSPBA/HEABC Provincial Agreement.

by employers, sonographers, and educators as a major contributing factor in the sonographer shortage in the province.

BC's private clinics, or Community Imaging Clinics ("CIC"s), pay their sonographers a starting wage up to \$10.64 or 35.8% more than BC public sector health employers. BC also loses experienced sonographers to both private and public employers in Alberta, Saskatchewan, and other provinces. Comparatively, Alberta's public health care employers pay a starting wage that is \$9.56 or 32% more than BC public sector health employers. Saskatchewan's public sector health employers pay a starting wage that is \$12.34 or 42% more than BC public sector health employers. BC public sector health employers' *top* wage is \$2.25 less and \$5.03 less, respectively, than the *starting* wage in Alberta's and Saskatchewan's public sectors. Alberta public sector health employers also offer a recruitment bonus of \$5,000 or \$10,000 for one and two year commitments, respectively. Private clinics in Alberta pay significantly more (as much as \$65/hour) and offer sizable signing bonuses as well as relocation expenses.

As a result of these wage disparities, health authorities are unable to compete with private clinics and other provinces in recruiting and retaining Sonographers. Therefore, the Committee recommends that a labour market adjustment is necessary and appropriate for Sonographers.

## **1.4 Other Recruitment and Retention Considerations**

Compensation is not the only factor contributing to public sector recruitment and retention challenges. Employers are competing with private sector clinics that can offer positions that do not require working shift work, weekends, or on-call. The workload in CICs may also be more appealing for Sonographers, as there are more obstetrics and non-urgent cases with mostly ambulatory patients. The public sector, on the other hand, has significantly higher numbers of complex, challenging, and emergent cases. The Committee has heard that difficult cases in high-paced environments coupled with shift work and frequent on-call shifts leads to sonographer burn-out and affects not only morale, but leads to further retention challenges. Sonographers are also susceptible to Repetitive Strain Injuries which, if experienced, contribute to workplace absences and Sonographer shortages.

## **1.5 Data**

Included in this report are figures, graphs, and tables that summarize much of the quantitative data supporting the Committee's recommendations. This data was largely gathered from collective agreements in BC, Alberta, and Saskatchewan, as well as the Health Sector Compensation Information System (HSCIS). HSCIS is a reporting system for all health employers in BC who receive over \$250,000 in funding from the Ministry of Health (MoH) or are a member of the HEABC. HSCIS maintains a comprehensive inventory of labour cost information on workers in the health system, including wage rates, paid hours and benefits information. Additionally, HSCIS collects data on the demographic attributes of health care employees such as their age, gender,

years of seniority and health care employment status. Health authorities and certain Health Science Professionals Bargaining Association (HSPBA) members also provided their information directly, and various advertisements and paystubs sourced by Committee members confirmed the wages and/or benefits offered by private clinics.

## 1.6 Committee's Recommendations

### *Short-term (within one year)*

The Committee recommends that the following measures be implemented immediately to address sonographer shortages in the public sector:

- **MoH/PSEC** should approve a market adjustment for Diagnostic Medical Sonographers to reduce the gap in wages between the public and private sector and inter-provincially. The Committee recommends that this market adjustment be in the form of a percentage increase applied across all Sonographer classifications' salary structures. Further, the Committee recommends that this market adjustment be implemented as soon as possible so as to enable BC's health authorities to more effectively recruit and retain Sonographers, including those soon to graduate from BCIT's Sonography program (November 2016). It is the Committee's view that a market adjustment will have the most immediate effect on the Sonographer shortage within health authorities.
- **BCIT** could significantly increase (ideally double) the number of training spaces in its Diagnostic Medical Sonography Diploma program starting in September 2016. This could be achieved by offering both day and evening courses, running the program over summer months; doing so would increase the normal supply of sonographers from November 2018 onwards.
- **BCIT** could maintain the existing two year program for some sonographers, but also introduce a shorter, fast-track program by creating separate cardiac and general sonographer streams.
- **BCIT** could decrease clinical placement length by offering students more time in its simulation lab. If that lab ran longer hours every day of the week, students could bring in family members, friends who can sign a waiver and students may practice their skills.
- **Health authorities**, with **Ministry of Advanced Education** and **BCIT** assistance, could take immediate steps to train existing medical imaging staff to perform ultrasound through one-year, in-house programs that use a distance education model for the didactic portion of training.
- **Health authorities**, at their discretion, can work with the **HSPBA** to offer recruitment incentives on a without prejudice/without precedent basis (e.g. signing bonuses, education funding linked to return-to-service agreements, etc.).
- **Ministry of Advanced Education** could consider offering government-funded bursaries for students enrolled in the Diagnostic Medical Sonography Diploma program.

Please reference Appendix K for the **HSPBA** ADDENDUM RE: PREFERRED OPTION FOR SIZE OF MARKET ADJUSTMENT; MORATORIUMS CONCERNING PRIVATE CLINICS.



### *Medium-term (within one to two years)*

The Committee recommends that the following measures be implemented as soon as possible, and ideally within the next one to two years:

- **BCIT** could continue to increase the intake of students into the Diagnostic Medical Sonography Diploma program.
- **BCIT** could allow **health authorities** to sponsor seats in the Diagnostic Medical Sonography Diploma program for existing Health Authority employees. Employees enrolled in those seats could be subject to return-to-work agreements.
- **Health authorities** could use Burwin Institute programs or a program similar to Northern Health Authority's Sonography Training at Rural Sites ("STARS") to address shortages and retention issues in rural and remote communities.

### *Long-term (within two to five years)*

The Committee recommends that the following measure be implemented as a long-term solution to address sonographer shortages in the province:

- **MoH and Ministry of Advanced Education** could consider creating a second Diagnostic Medical Sonography Diploma program located outside of Metro Vancouver. This approach has been successful in dealing with the previous chronic shortage of medical laboratory technologists and x-ray technologists. This second program could be the standard two-year program, or it could offer a one-year program geared to train current medical imaging technologists to perform ultrasonography only, or in addition to their current medical imaging modalities. If situated in an underserved area, it could assist with recruitment by training local students who are more likely to remain in the area.

### *Key Considerations*

While the Committee is eager to have these recommendations implemented, it would be remiss not to acknowledge certain challenges that will arise in employing these proposed measures:

- These recommendations will require the cooperation and support of BCIT, which may include running a training program on evenings and weekends and throughout the summer months.
- As the province succeeds in addressing the new graduate shortage in BC, the market will correct itself and health authorities will have Sonographers being paid at higher rates than other in-demand technologists in the future.
- Since Sonographers experience a very high injury rate, especially from overuse injuries and repetitive strain injuries, it is not a long-term solution to require current Sonographers to work overtime as a strategy to address the shortage or to reduce patient wait lists.

- While not identified as a "risk", the parties may need to address local modifications of Miscellaneous Provision 2(h) of the HEABC/HSPBA Provincial Agreement and are prepared to do so on a strictly without prejudice basis.

# Introduction

This report has been prepared by the HEABC/HSPBA Recruitment and Retention Committee (the “Committee”) for the purpose of providing its recommendations for addressing the shortage of Diagnostic Medical Sonographers in the BC public health sector.

This report is organized into six sections:

- **Overview of Sonographer Supply Shortage in BC**
  - A summary of the extent of the sonographer supply shortage on the BC health care system, projected demand increases, and the effect on patient care.
- **Education**
  - An overview of the BCIT Diagnostic Medical Sonography Diploma Program, its challenges in meeting the provincial demand for these professionals, and other training options explored by health authorities.
- **Compensation**
  - A review and comparison of BC’s public and private sector wages and recruitment incentives for Sonographers, as well as a review and comparison of inter-provincial wages and recruitment incentives offered by Alberta’s and Saskatchewan’s public and private sectors.
- **Other Recruitment and Retention Considerations**
  - Based on exit interviews and information obtained from professionals in the industry, this report outlines other factors cited as contributing to retention problems, including weekend and evening shift work, on-call shifts, workload, and the complexity of cases faced by public sector Sonographers.
- **Data**
  - Figures, tables and charts outlining demographics and trends for Sonographers in BC
- **Committee’s Recommendations**
  - Details of the Committee’s short-term, medium-term, and long-term recommendations for addressing the provincial Sonographer shortage, as well as key considerations that factor into any choice to implement the proposed recommendations.

# Overview of Sonographer Supply Shortage in BC

## 3.1 Current Shortages of Sonographers in BC

A shortage of Sonographers is not an issue that is unique to BC; there is a shortage of sonographers across Canada and around the globe. Health authorities are competing with both the BC private sector and out-of-province public and private sector employers. Private companies in the United States also continue to actively recruit sonographers from BC

Sonographer continually appears in the Top 10 of Difficult-to-Fill Health Science Professional vacancies for HEABC member employers.<sup>3</sup> “Difficult-to-Fill” vacancies are those that are advertised externally and remain unfilled after three months of active recruitment. The most recent data compiled by HEABC for the first quarter of 2016 listed a total of 21 permanent and temporary Difficult-to-Fill vacancies across the province. These 21 vacancies amount to a vacancy rate of 5.4%, which is the third-highest vacancy rate of all of the Health Science Professions in the province. To be clear, this number does not reflect all of the Sonographer vacancies in the province, but rather those that meet the definition of Difficult-to-Fill. The total number of Sonographer vacancies at any given time is higher than simply the number of Difficult-to-Fill vacancies.

The reason for the Sonographer shortage in BC’s public sector is multifaceted, however, the fact remains that the demand for Sonographers continues to outstrip the supply of new graduates, and this chasm has been increasing each year as demand continues to rise. Over the last ten years, Sonographer FTEs in health authorities and Affiliates have steadily increased, with 201 FTE employed by public health employers in 2006 compared to 353 FTE in 2015.<sup>4</sup> Nonetheless, the Sonographer shortage remains unabated.

This supply shortage was further exacerbated in 2010, when BCIT expanded its Diagnostic Medical Sonographer’s program from one year to two, leading to a gap year with no newly graduated Sonographers entering the workforce. Add to this an aggressive recruitment effort by Alberta in 2014 that saw 9 of the 30 newly graduated sonographers leaving the province.

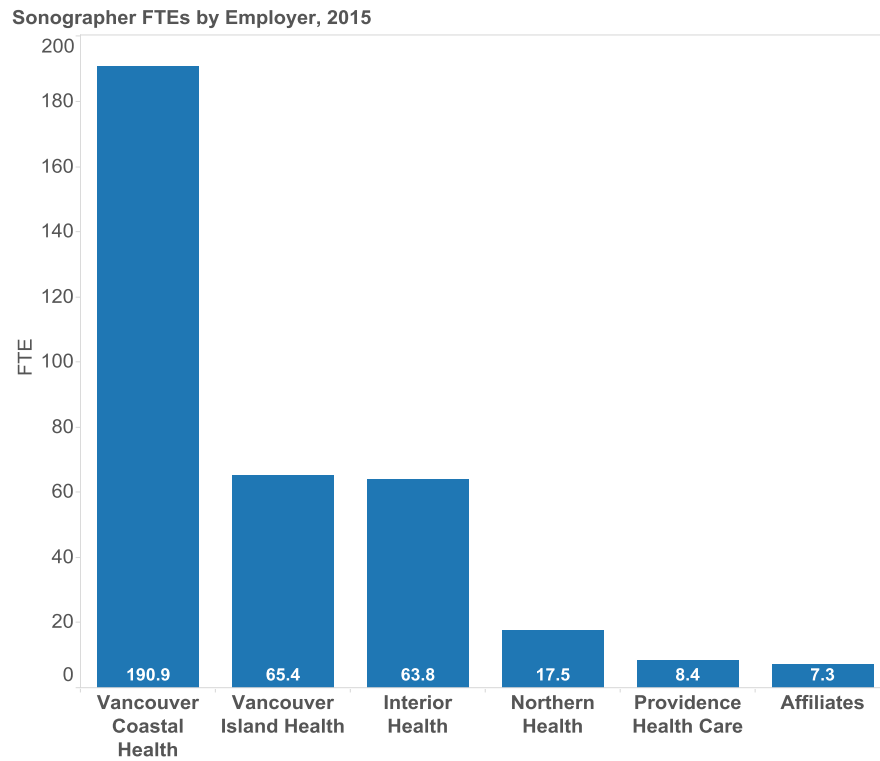
Currently, the health authorities collectively employ 346 FTE of sonographers, distributed as follows:

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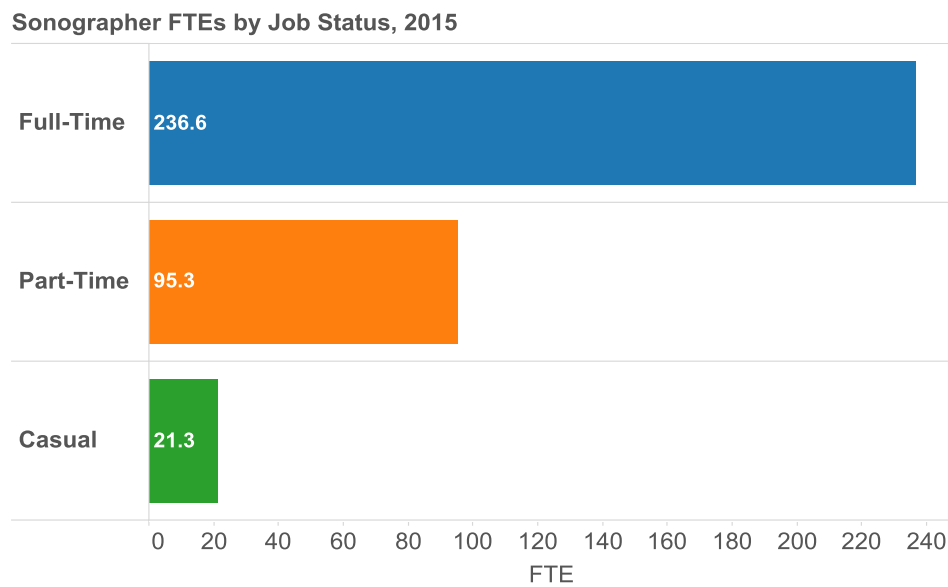
<sup>3</sup> See Appendix B for more information.

<sup>4</sup> See Figure 7.1.1 - FTE Trend 2006-2015

**Figure 3.1.1 Sonographer FTEs by Employer, 2015**



**Figure 3.1.2 Sonographer FTEs by Job Status, 2015**



Vacancy rates across the province show that existing Sonographer levels are not meeting the industry's demands.

After bloodwork, ultrasound is often the first diagnostic test ordered by physicians and wait times are becoming increasingly unmanageable. In most health authorities, patients with urgent cases wait weeks for a diagnostic sonogram, possibly leading to delayed treatment and putting patient care at risk.

At Interior Health Authority ("IHA") for example, a patient in urgent need of a general ultrasound exam will wait anywhere from two days to 12 weeks for their exam depending on the site, and even up to six months for a shoulder exam. Non-urgent or elective exams wait even longer: patients will wait between two and 45 weeks, depending on the type of exam or the particular site. To address some of this demand, IHA decided to contract with private companies.

The situation is similar in Northern Health Authority ("NHA") which has seen a steady increase in exam volumes over the years. In fiscal year-end 2006/2007, the health authority performed 39,499 exams; by year-end 2014/2015, NHA had performed 53,429 exams (down from 59,146 in the previous year 2013/2014 – a decrease that was not attributable to a reduced demand, but rather to lack of staff). Sonography wait times at NHA range from eight to 72 days, depending on the site.<sup>5</sup>

Lower Mainland Medical Imaging released a memo dated July 21, 2016<sup>6</sup> which stated that:

A severe shortage of qualified sonographers is impacting access to ultrasonography and echocardiography services across Fraser Health. Some hospital sites are experiencing such staffing shortages that only inpatient and emergency cases can be accommodated and outpatient referrals are being diverted to other facilities.

At some sites the staffing shortages are resulting in ultrasound room closures...

Wait times for outpatient ultrasound services at these locations are beyond acceptable levels. Requests for outpatient ultrasonography and echocardiography exams may be diverted to other locations. Every effort is being made to accommodate inpatient and emergency cases at these sites.

HSPBA has received information from its member Sonographers describing the impact of their employers' inability to recruit Sonographers. Impacts include unacceptable wait times for patients in the Vancouver-area hospitals. Members have also advised HSPBA that working short staffed has become the norm, and employees are at a "breaking point".

Island Health is also experiencing increasing wait times due to Sonographer staffing shortages. Island Health currently has a wait list of approximately 17,000 routine cases, and can no longer book routine cases in the south island. In fact, Island Health's wait list has doubled in the last six

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<sup>5</sup> Appendix C

<sup>6</sup> Appendix D

months. To address this backlog, Island Health is considering contracting with a private service provider to provide Sonographers to use Island Health equipment at times when the equipment is idle because its Sonographers are unavailable. The use of a contracted service provider is a short-term solution until such time as Island Health can find medium- and long-term solutions.

At least three health authorities have contracted with private sonography companies to provide Sonographers to work in hospitals. In so doing, health authorities incur higher costs than they otherwise would by directly employing Sonographers. A market adjustment will improve health authorities' ability to recruit and retain their own Sonographers.

## 3.2 Projected Shortages

Projected population growth and age demographics predict that future demand for diagnostic medical sonographers will continue on an upward trend. For example, Island Health Authority ("Island Health") has cited a notable increase in demand for sonography exams over the last five years.<sup>7</sup>

Similar to the general population, the average age of Sonographers in the public health sector is also increasing. In 2006, the average age of a Sonographer in the public health sector was 43 years old; as of 2015, the average age has increased to 44 years old. On average, Sonographers are older than other diagnostic medical technologists<sup>8</sup> in the public health sector, with 21% of Sonographers over the age of 55.<sup>9</sup> Sonographers aged 35-39 are the largest cohort that transition from full-time to part-time work; this age bracket is twice as likely as any other age bracket to downgrade their employment status.<sup>10</sup>

By way of example, NHA in particular has struggled to recruit and retain its Sonographers who are often enticed by the higher wages offered in neighbouring Alberta or local CICs. NHA currently has four Difficult-to-Fill vacancies, yet even if these vacancies were filled immediately, NHA projects that it will need to hire a further six Sonographers per year between 2016 to 2021 to meet projected demand and to replace retiring Sonographers and those Sonographers on leaves.<sup>11</sup>

Diagnostic Medical Sonography is a female-dominated field with women comprising 81% of sonographers.<sup>12</sup> Unlike other groups of Medical Imaging Technologists, the bulk of younger Sonographers (83%) work full-time; as these sonographers age, the percentage of those working

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<sup>7</sup> See Figure 7.1.12 - VIHA – 5-Year US Demand with Trend Line

<sup>8</sup> Other medical technicians include Biomedical Engineering Technologists, Cardiology Technologists, Diagnostic Neurophysiology Technicians, Medical Radiation Technologists, Medical Technologists, Nuclear Medicine Technologists, Renal Dialysis Technicians and X-Ray Assistants.

<sup>9</sup> See Figure 7.1.2 – Average Age of Diagnostic Medical Sonographers in the Public Health Sector

<sup>10</sup> See Figure 7.1.4 - Percentage of Workforce Aged 55 and Over

<sup>11</sup> See Figure 7.1.13 – NHA's Projected Demand for Sonographers 2016-2015

<sup>12</sup> See Figure 7.1.7 – Gender Breakdown

full-time steadily decreases to only 50-60% of Sonographers in their mid-thirties through mid-fifties, and to half of Sonographers over the age of 60 working full-time.<sup>13</sup> Overall, in 2015, the average Sonographer in the public health care system worked only two-thirds of a total FTE.<sup>14</sup> Since 2011, in comparison to other Medical Imaging Technologists, there has been a noticeably higher rate of Sonographers downgrading their employment from either full-time to part-time or casual, or part-time to casual.<sup>15,16</sup> Factors contributing to these trends are discussed further within this report.

With the assistance of the BC Radiologic Society (“BCRS”) and the Provincial Imaging Council, the Committee received information that in 2015, CICs employed a total of 124.9 FTEs across the province. CICs also reported vacancies, though their vacancy rates were nearly half the vacancy rate of health authorities.<sup>17</sup> Unfortunately, despite requests, the Committee was unsuccessful in obtaining this same information on CIC vacancy rates for 2016.

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<sup>13</sup> See Figure 7.1.5 – Percent Full-Time by Age

<sup>14</sup> See Figure 7.1.7 – FTE per Headcount

<sup>15</sup> See Figure 7.1.9 - Employment Downgrade Rates

<sup>16</sup> See Figure 7.1.11 - Age of Full-Time to Part-Time Transition as % of Total

<sup>17</sup> CICs reported 5.1 FTE vacant in the Lower Mainland, 2 vacant FTE in the interior, and one vacant FTE on Vancouver Island. The CICs reported no vacancies in the north. This represented approximately a six percent vacancy rate for CICs province-wide. By comparison, HAs employed a total of 347 FTE in 2015 and reported 39.5 FTE vacant, for an 11 percent vacancy rate.



# Education & Certification

## 4.1 Certification by Sonography Canada

Sonography is currently not a regulated profession in BC; nonetheless, health authorities and many private clinics require graduation from an accredited educational program, plus eligibility for or actual certification with Sonography Canada. Sonographers must pass Sonography Canada's exams to be certified. New grads from accredited educational programs are automatically eligible to write the Sonography Canada exams required for certification. Currently, the only accredited Diagnostic Medical Sonography program in BC is BCIT's two-year program.

BC graduates from non-accredited programs (such as Burwin's distance education program) can apply to Sonography Canada to take the necessary exams for certification; Sonography Canada then grants eligibility to take its certification exam on a case-by-case basis.

BC is considering the establishment of a new regulatory College of Diagnostic and Therapeutic Health Professionals ("CDTHP"), and it is the intention that Sonographers will be included as a regulated profession. If approved, the CDTHP will affect future licensing and educational requirements for Sonographers.

## 4.2 BCIT's Diagnostic Medical Sonographers Diploma Program

The British Columbia Institute of Technology ("BCIT") offers the only Diagnostic Medical Sonography diploma program in the province. The 27 month, full-time, on-campus program commences each September and has a maximum intake of 30 students. Students spend 46 weeks of the program in clinical training. Health authorities, particularly those in the lower mainland, provide the majority of clinical training to all BCIT students each year. By comparison, only a small number of CICs offer clinical placements for obstetrics work, yet students completing their clinical experience with a Health Authority do not have an obligation to accept employment with a Health Authority upon graduation.

While previously there were separate programs for Ultrasound and Cardiac Sonographers, BCIT has since combined the programs and students graduate able to perform both specialties. We understand that BCIT is currently considering offering both combined and separate ultrasound and cardiac programs in order to expedite Cardiac Sonographers through the program within one year.

The Cardiac program previously required an ultrasound diploma for entry and consisted of 12 weeks of didactic training plus a clinical practicum. Students could start the program at three different times during the year. In 2010, BCIT changed their ultrasound program from a one-year post-diploma program to a two-year program with high school completion as the minimum entry requirement. As a result of the change from a one-year to a two-year program in 2010, no newly

graduated Sonographers entered the workforce in 2011. In 2012, BCIT increased its program intake from 24 to 30 students. Recently, the Committee has learned that BCIT has increased its two-year program intake to 32 students for September 2016, and will be offering a "fast-track" 14-month program for eight Cardiac Sonography students and eight General Sonography students in January 2017.

### **4.3 The Burwin Institute of Diagnostic Medical Ultrasound**

The Burwin Institute of Diagnostic Medical Ultrasound offers a distance education program in sonography. Some of their courses are approved by some American organizations, but their sonography program is not accredited in Canada. Sonography Canada determines on a case-by-case basis whether or not students who complete the Burwin program are eligible to take the Sonography Canada exams required for certification.

NHA has created its own in-house training program: Sonography Training at Rural Sites ("STARS"). The program cross-educates current employees (e.g. x-ray technologists) in the ultrasound sonography field. Applicants selected to participate in the program are trained online through the Burwin Institute, and then complete practicums at NHA facilities. The program takes approximately 18 months to train a new Sonographer. Graduates of this training program have been allowed to sit the national exams and have obtained Sonography Canada certification. NHA covers the cost of the program for successful applicants, in exchange for two-year commitments from the graduates to remain in their communities.

Please refer to Sections 1.6, 8.1, and 8.2 for recommendations under this section.

# Compensation

## Overview

While there are other factors contributing to the BC public sector's retention issues, **compensation is the most common reason that Sonographers cite for not entering (or for leaving) the public sector, in favour of pursuing employment in the private sector or out-of-province.** BC's public sector wages alone are also not competitive enough to recruit out-of-province Sonographers, or those working in the private sector. In the Committee's view, there is a clear link between the significant wage disparity – between BC's public and private sectors, and between BC's public sector and Alberta's and Saskatchewan's public and private sectors – and Sonographer recruitment and retention issues.

The data cited throughout this Report all pertain to entry-level Sonographer compensation.

This section begins by comparing the wages and recruitment incentives paid by BC's public and private sectors, followed by a comparison of public sector wages paid in all Canadian provinces. Then, the public sector salary structures of the three western-most provinces are compared. Continuing with BC, Alberta, and Saskatchewan, wages and recruitment incentives for both the public sector and private sector are compared. This is followed by at-a-glance summaries that consolidate the comparative data for wages and recruitment incentives, as between BC's public sector and its competition within BC and from Alberta's and Saskatchewan's public and private sectors. Based on the data, this section ends with the Committee's conclusions and recommendations pertaining to compensation.

## 5.1 Comparison between BC's Public Sector and Private Sector

### a) Wages

BC's public sector wages are those found in the Provincial Agreement between the HSPBA and HEABC. Table 5.1.1 reflects the six-increment salary structure currently in effect.

**Table 5.1.1 – BC's public sector wages**

Collective Agreement	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	6 <sup>th</sup> year
HSPBA/HEABC (BC public sector)	29.71	31.18	32.61	34.08	35.45	37.02

Non-unionized CICs are not required to make public their terms and conditions of employment, including wages and benefits. Due to the competitive nature of the industry, the Committee was not in a position to approach CIC's directly to request the terms and conditions of their

employment contracts. Therefore, it was necessary for the Committee to gather data on CIC wages from certain job postings, e.g., as advertised via Sonography Canada, and from certain paystubs requested by the Committee from individuals working in CICs. This report reflects all data that the Committee was able to obtain.

Table 5.1.2, below, provides a comparative *listing* of the BC public sector wages to each of the CICs in BC for which the Committee obtained data. One CIC, West Coast Medical Imaging, is unionized. All other listed CICs are not unionized.

**Table 5.1.2 - Comparative listing of wages<sup>i</sup> paid by BC's public sector and private sector**

Employer <sup>ii</sup>	Location	Prov	Starting Wage	Amount by which starting wage differs from BC public sector wage	Percentage by which starting wage differs from BC public sector wage	Top Wage	Amount by which top wage differs from BC public sector wage	Percentage by which top wage differs from BC public sector wage
Kelowna Medical Imaging	Kelowna	BC	\$40.35	\$10.64	36%	\$42.84	\$5.82	16%
Greig Associates	Vancouver	BC	\$37.79	\$8.08	27%	N/A	N/A	N/A
Valley Medical Imaging	Langley	BC	\$37.30	\$7.59	26%	\$42.00	\$4.98	13%
West Coast Medical Imaging	Several	BC	\$33.20	\$3.49	12%	\$37.57	\$0.55	1%
Phoenix Medical Imaging	Prince George	BC	\$32.00	\$2.29	8%	\$42.00	\$4.98	13%
BC public sector (HSPBA)	Several	BC	\$29.71	0	0	\$37.02	0	0

Notes:

<sup>i</sup> Hourly rates compared are those paid for working daytime hours, Monday to Friday. CICs pay significantly higher rates for evening or weekend work (e.g., Greig Associates in BC pays \$45.15 per hour, and Medray Imaging in BC pays \$45.10 per hour).

All rates compared are from 2016, except for Valley Medical Imaging for which 2014 rates were the most recent available. Rates are from pay stubs, a collective agreement, or job postings.

<sup>ii</sup> Employers are listed from highest to lowest **starting** wage.

Table 5.1.3, below, provides a comparative *summary* of the BC public sector wages to those of the aforementioned CICs in BC, as detailed in Table 5.1.2. The data indicate that, of five BC CICs for which starting wages were known, the average *starting* wage is \$6.42 or 21.6% higher than the BC public sector hourly rate. **For starting wages, the highest hourly differential is \$10.64 or 35.8% more than paid in the BC public sector.** Of four BC CICs for which top wages were known, the average *top* wage is \$4.08 or 11.0% higher than the BC public sector hourly rate. For top wages, **the highest hourly differential is \$5.82 or 15.7% more than paid in the BC public sector.**

Sonographers need not relocate outside of BC to be paid significantly higher wages than those paid to Health Authority employees.

**Table 5.1.3 – Comparative summary of wages paid by BC’s public sector and private sector**

	Starting Wage	Amount by which rate exceeds BC public sector starting wage		Top Wage	Amount by which rate exceeds BC public sector top wage	
		\$	%		\$	%
<b>BC public sector</b> (HSPBA)	\$29.71	0	0	\$37.02	0	0
<b>BC private sector</b> (M-F daytime rates):						
Lowest	\$32.00	\$2.29	7.7%	\$37.57	\$0.55	1.5%
Highest	\$40.35	\$10.64	35.8%	\$42.84	\$5.82	15.7%

<b>Average</b>	<b>\$36.13</b> <b>(average of</b> <b>5 clinics)</b>	<b>\$6.42</b>	<b>21.6%</b>	<b>\$41.10</b> <b>(average of</b> <b>4 clinics)<sup>18</sup></b>	<b>\$4.08</b>	<b>11.0%</b>
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**Notes:**

Data taken from pay stubs, a collective agreement, and job postings, including several from the Sonography Canada website posted from 2014 – 2016.<sup>19</sup> Where the same employer advertised jobs on this site multiple times, data were taken from the most recent posting.

*b) Recruitment Incentives*

“Benefits”, as listed on certain BC private clinic job postings, include Monday to Friday work, with no on-call; medical, dental and health benefits; education funding; flexible hours; no on-call, weekend, or shift work; good benefits package; or continuing education opportunities.

Similarly, bonus and recruitment incentives include performance bonuses, relocation allowance consideration; or moving expense reimbursement consideration.

Table 5.1.4, below, compares BC’s public sector’s incentives to those offered by the private sector. Although CICs offer some incentives, those offered in both the private and public sectors in Alberta and Saskatchewan are particularly significant (see 5.4.2).

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<sup>18</sup> These are the four clinics for which the top rate was known. One clinic did not include its top rate in the letter of offer that the Committee was able to obtain.

<sup>19</sup> Sonography Canada. Retrieved from <http://www.sonographycanada.ca/Apps/Pages/home-csdms>

**Table 5.1.4 - Summary of non-wage recruitment & retention incentives offered to Sonographers<sup>i</sup> in BC**

	<b>Signing Bonus</b>	<b>Bursary (new grads)</b>	<b>Relocation Assistance</b>	<b>Other</b>
<b>BC public (HSPBA)</b>	None	None <sup>20</sup>	None	Isolation allowance (of \$74/mo) in some communities  Education Leave/Allowance as per Article 17
<b>BC private (four clinics)</b>	None	None	Considered at two clinics	All offer some education funding. One offers performance bonuses.

**Notes:**

<sup>i</sup>Incentives offered to hire sonographers into entry-level positions. Based primarily on job postings from the Sonography Canada website posted from 2014-2016<sup>21</sup>. Where the same employer advertised jobs on this site multiple times, data were taken from the most recent posting.

*c) Public Sector Benefits*

Approximately 25% of public sector compensation for sonographers is in the form of benefits over and above what private employers must provide. This figure includes extra vacation and statutory holidays, payment for Medical Services Plan premiums, Extended Healthcare, Dental, Group Life, Long Term Disability, and contributions to the Municipal Pension Plan.

## 5.2 Inter-Provincial Public Sector Wage Comparisons

Table 5.2.1, below, lists the provinces in order from the highest to lowest *starting* wage. Based on wages alone, the data underscores the financial incentives for new graduates, or for Sonographers currently employed in BC, to seek work in any of six higher-paying jurisdictions outside of BC.

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<sup>20</sup> The BC Government offers loan forgiveness to Sonographers that work in under-served areas in the public sector post-graduation (20% of the Sonographers' BC Student loan for each year of employment, up to five years).

<sup>21</sup> *Sonography Canada*. Retrieved from <http://www.sonographycanada.ca/Apps/Pages/home-csdms>

**Table 5.2.1 - Interprovincial ranking of public sector wages for Sonographers<sup>i</sup>**

Province <sup>i</sup>	Starting Wage	Wage 6 <sup>th</sup> Year	Top Wage <sup>iii</sup>	Ranking of Top wage
SK	42.05	45.05	45.05	2
AB	39.27	45.96	50.64	1
MB	33.33	38.64	38.64	5
NL	31.48	39.63	39.63	4
ON	30.04	37.68	41.48	3
NS	29.95	34.95	34.95	7
BC <sup>ii</sup>	29.71	37.02	37.02	6
PE	28.33	34.75	34.75	8
NB	26.59	33.33	33.33	9
QC	21.59	29.20	31.25	10

Notes:

<sup>i</sup> Provinces are listed from highest to lowest **starting** wage.

<sup>ii</sup> BC ranks 7<sup>th</sup> out of 10 provinces for starting wage, and 6<sup>th</sup> for top wage.

<sup>iii</sup> Top wage is in **red** where it differs from 6<sup>th</sup> year wage.

Data from Table 5.2.1 was used to calculate the dollar difference and percentage difference between what other provinces pay for starting and top wages in comparison to those wages paid by BC



**Table 5.2.2 - Interprovincial comparison of public sector wages for Sonographers<sup>i</sup>**

Province <sup>i</sup>	Starting Wage	Amount by which starting wage differs from BC	Percentage by which starting wage differs from BC	Top Wage <sup>iii</sup>	Amount by which top wage differs from BC	Percentage by which top wage differs from BC
SK	42.05	\$12.34	42%	45.05	\$8.03	22%
AB	39.27	\$9.56	32%	50.64	\$13.62	37%
MB	33.33	\$3.62	12%	38.64	\$1.62	4%
NL	31.48	\$1.77	6%	39.63	\$2.61	7%
ON	30.04	\$0.33	1%	41.48	\$4.46	12%
NS	29.95	\$0.24	1%	34.95	-\$2.07	-6%
BC <sup>ii</sup>	29.71	\$0.00	0%	37.02	\$0	0%
PE	28.33	-\$1.38	-5%	34.75	-\$2.27	-6%
NB	26.59	-\$3.12	-11%	33.33	-\$3.69	-10%
QC	21.59	-\$8.12	-27%	31.25	-\$5.77	-16%

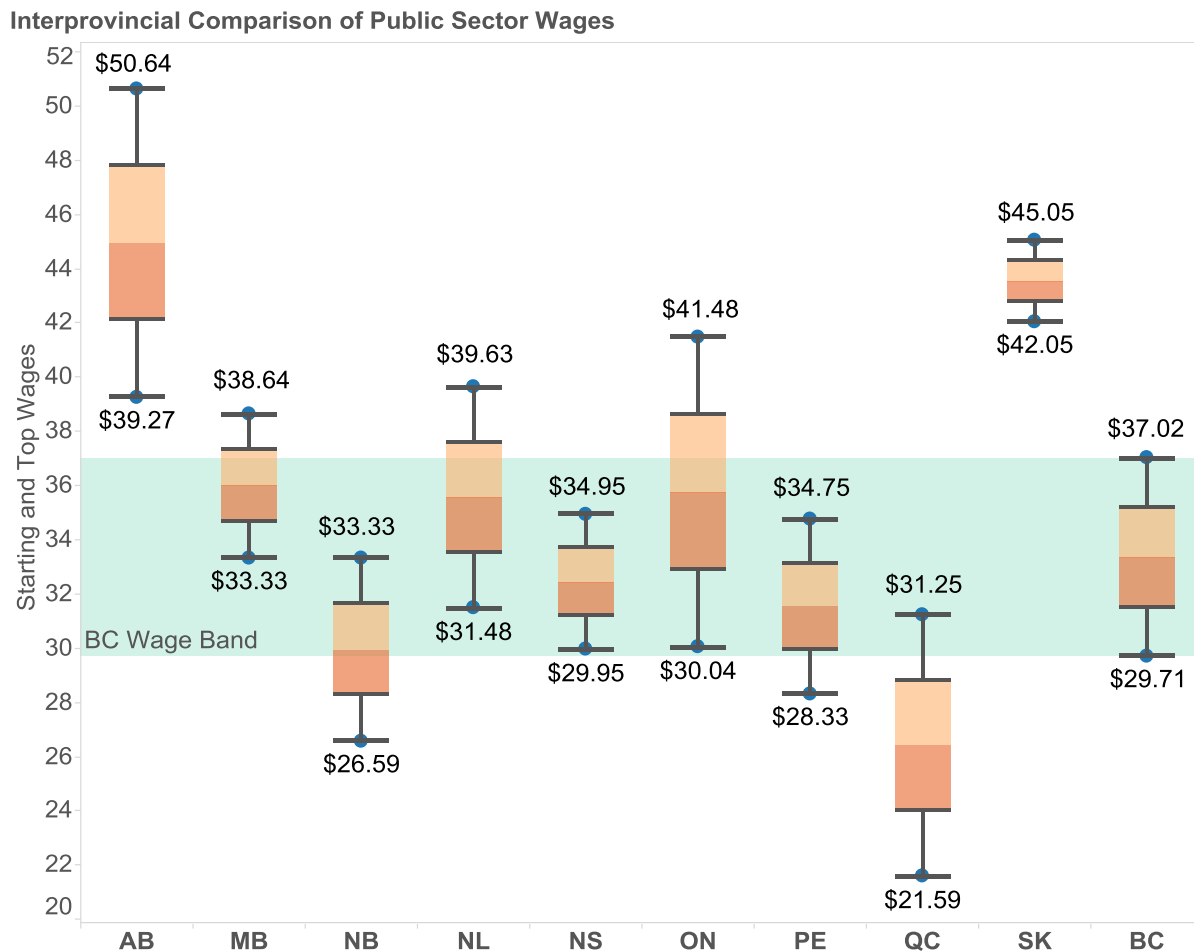
Notes:

<sup>i</sup> Provinces are listed by **starting** wage (highest to lowest).

<sup>ii</sup> BC ranks 7<sup>th</sup> out of 10 provinces for starting wage, and 6<sup>th</sup> for top wage.

<sup>iii</sup> Top wage is in **red** where it differs from 6<sup>th</sup> year wage for that province.

**Figure 5.2.1 – Interprovincial Comparison of Public Sector Wages**



Six other provinces rank higher than BC for the starting wage in the public sector. **Alberta pays a starting wage that is \$9.56 or 32% higher than that paid by BC.** Given its substantially higher wage structure, in combination with its geographic proximity to BC, Alberta has proven to be a successful recruiter of Sonographers, to the detriment of BC's public sector employers and its sonography services.

**Saskatchewan pays a starting wage that is \$12.34 or 42% higher than paid by BC**

## 5.3 Salary Structure Comparison between Public Sectors in BC, Alberta and Saskatchewan

Table 5.3.1 provides a current salary increment-by-increment comparison between the BC, Alberta, and Saskatchewan public sectors.

**Table 5.3.1 - Salary structure comparison between BC, Alberta and Saskatchewan public sectors**

Collective Agreement	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	6 <sup>th</sup> year	7 <sup>th</sup> year	8 <sup>th</sup> year	9 <sup>th</sup> year
HSPBA/HEABC <sup>i</sup> (BC public sector)	\$29.71	\$31.18	\$32.61	\$34.08	\$35.45	\$37.02	(\$37.02)	(\$37.02)	(\$37.02)
HSAA/AHS <sup>ii</sup> (Alberta public sector)	\$39.27	\$40.51	\$41.79	\$43.18	\$44.53	\$45.96	\$47.46	\$48.95	\$50.64
\$ and % amount by which Alberta's public sector exceeds BC's public sector	\$9.56 32.2%	\$9.33 29.9%	\$9.18 28.2%	\$9.10 26.7%	\$9.08 25.6%	\$8.94 24.1%	\$10.44 28.2%	\$11.93 32.2%	\$13.62 36.8%
CUPE/SAHO <sup>iii</sup>  (Saskatchewan's public sector)	\$42.05	\$43.52	\$45.05	(\$45.05)	(\$45.05)	(\$45.05)			
\$ and % amount by which Saskatchewan's public sector exceeds BC's public sector	\$12.34 41.5%	\$12.34 39.6%	\$12.44 38.1%	\$10.97 32.2%	\$9.60 27.1%	\$8.03 21.7%			

Notes:

<sup>i</sup> The BC public sector's salary structure has 6 steps.

<sup>ii</sup> The Alberta public sector's salary structure has 9 steps;<sup>22</sup>

<sup>iii</sup> The Saskatchewan public sector's salary structure has 3 steps;<sup>23</sup>

By comparing public sector salary structures in BC, Alberta, and Saskatchewan, the Committee notes that:

- BC's public sector *top* wage is \$2.25 less and \$5.03 less, respectively, than the *starting* wage in Alberta's and Saskatchewan's public sectors.
- The starting wages in Alberta's and Saskatchewan's public sectors are 32.2% more and 41.5% more, respectively, than BC's public sector starting wage.
- After 8 years' service in Alberta, a Sonographer is paid 36.8% more than one employed in BC
- The top wage in Saskatchewan is reached after only two years' service, whereas an employee in BC must have 5 years' service before being entitled to the (lower) BC top wage.

## 5.4 Comparison between BC Public Sector and Public and Private Sectors in Alberta and Saskatchewan

### a) Wages

Table 5.4.1, below, provides a comparative summary of the BC public sector wages to those of the aforementioned public and private sectors in Alberta and Saskatchewan. (The private sector in BC is detailed in Section 5.1.)

The data indicate that, of five Alberta and Saskatchewan CICs for which starting wages were known, the average *starting* wage is \$13.58 or 45.7% higher than the BC public sector wage. **For starting wages, the highest hourly differential is \$20.29 or 68.3% more than paid in the BC public sector.** Of four CICs for which top wages were known, the average *top* wage is \$20.10 or 54.3% higher than the BC public sector hourly rate. For top wages, **the highest hourly differential is \$27.98 or 75.6% more than paid in the BC public sector.**

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<sup>22</sup> Collective Agreement between the Health Sciences Association of Alberta (Paramedical Professional and Technical Employees) and the Bethany Nursing Home of Camrose, AB and Lamont Health Care Centre and Alberta Health Services. (April 1, 2014 to March 31, 2017). Retrieved from <http://www.hsaa.ca/member-resources/collective-bargaining-agreements/alberta-health-services-collective-agreement-2014#ARTICLE 40: JOB CLASSIFICATIONS>

<sup>23</sup> Collective Agreement between CUPE and SAHO (April 1, 2012 – March 31, 2017). Retrieved from <http://cupesaskhcc.ca/collective-agreement>

**Table 5.4.1 - Summary of wages for Sonographers**

	Starting Wage	Amount by which rate exceeds BC public sector starting wage		Top Wage	Amount by which rate exceeds BC public sector top wage	
		\$	%		\$	%
<b>BC public</b> (HSPBA)	\$29.71	0	0	\$37.02	0	0
<b>Other provinces – public</b>						
Alberta	\$39.27	\$9.56	32.2%	\$50.64	\$13.62	36.8%
Saskatchewan	\$42.05	\$12.34	41.5%	\$45.05	\$8.03	21.7%
<b>Other provinces – private</b> (4 in AB, 1 in SK)						
Lowest	\$37.50	\$7.79	26.2%	\$51.49	\$14.47	39.1%
Highest	\$50.00	\$20.29	68.3%	\$65.00	\$27.98	75.6%
<b>Average</b>	<b>\$43.29</b> (average of 5 clinics)	<b>\$13.58</b>	<b>45.7%</b>	<b>\$57.12</b> (average of 4 clinics)	<b>\$20.10</b>	<b>54.3%</b>

**Notes:**

Data taken from pay stubs, collective agreements, and job postings, including several from the Sonography Canada website posted from 2014 – 2016.<sup>24</sup> Where the same employer advertised jobs on this site multiple times, data were taken from the most recent posting.

*b) Recruitment Incentives*

i) Public Sector in Alberta:

The Collective Agreement between Alberta Health Services and Health Sciences Association of Alberta includes Letter of Understanding #23 - RE: RECRUITMENT BONUS FOR NEW SONOGRAPHERS.

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<sup>24</sup> Sonography Canada. Retrieved from <http://www.sonographycanada.ca/Apps/Pages/home-csdms>

It provides recruitment bonuses for new graduates or non-AHS Sonographers who agree to be employed in a rural or suburban site where recruitment issues are impacting operations. Rural or suburban sites are those outside of the Edmonton and Calgary city limits.

In exchange for a Return of Service Agreement, for a 0.6 or greater FTE permanent position, a one-year commitment yields \$5,000 bonus and a two-year commitment yields \$10,000 bonus<sup>25</sup>. See Appendix F.

The BC Public Sector does not offer a recruitment bonus.

ii) Public Sector in Saskatchewan:

Recruitment incentives, as listed on a Regina Qu'Appelle Health Region job posting, include \$2000 relocation assistance; \$5000 new grad bursary; \$5000 recruitment incentive; compensation for credential certification exam costs; pension and benefits.<sup>26</sup>

iii) Private Sector in Alberta:

Recruitment incentives, as listed on certain Alberta private clinic job postings, include relocation assistance; recruitment bonus; skill set premiums; excellent benefits; health/personal spending account; \$15,000 recruitment bonus<sup>27</sup>; \$75,000 recruitment bonus in Fort McMurray.<sup>28</sup>

iv) Private Sector in Saskatchewan

Recruitment incentives, as listed on certain Saskatchewan private clinic job postings, include signing/relocation bonus; excellent benefits; commission based compensation.<sup>29</sup>

Table 5.4.2 summarizes the foregoing recruitment incentives offered outside BC. As mentioned earlier, in relation to Table 5.1.4, BC's private sector offers some incentives, but those offered in both the private and public sectors in Alberta and Saskatchewan are particularly significant.

**Table 5.4.2 - Summary of non-wage recruitment & retention incentives offered to Sonographers<sup>i</sup>**

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<sup>25</sup> Appendix F

<sup>26</sup> Appendix G

<sup>27</sup> As per an Offer of Employment letter from Alberta's Canada Diagnostics. The HSPBA received a copy of this letter on the assurance that the individual's identity would be kept anonymous; as such, it is not provided as an appendix to this report. The HSPBA authors of this report confirm the accuracy of this representation.

<sup>28</sup> Appendix H

<sup>29</sup> Appendix I

	Signing Bonus	Bursary (new grads)	Relocation Assistance	Other
<b>BC public (HSPBA)</b>	None	None <sup>30</sup>	None	Isolation allowance (of \$74/mo) in some communities  Education Leave/Allowance as per Article 17
<b>Other provinces<sup>ii</sup> – public (1 in SK)</b>	\$5,000	\$5,000	\$2,000	Certification exam costs
<b>Other provinces – private (6 in AB, 1 in SK)</b>	5 of 7 offer. Ranges from \$10,000 to \$75,000. <sup>iii</sup>	None	6 of 7 offer. Ranges from airfare to \$2,000. <sup>iii</sup>	5 of 7 offer additional incentives. <sup>iv</sup>

**Notes:**

<sup>i</sup> Incentives offered to hire sonographers into entry-level positions. Based primarily on job postings from the Sonography Canada website posted from 2014-2016.<sup>31</sup> Where the same employer advertised jobs on this site multiple times, data were taken from the most recent posting.

<sup>ii</sup> Data were used from available postings for jobs in the three western provinces only: BC, AB & SK.

<sup>iii</sup> Some postings merely indicate an incentive is available, others state the amount provided.

<sup>iv</sup> Additional incentives vary among employers, and include: \$1,000 annually for HSA or PSA (Health or Personal Savings Account, respectively), northern living allowance, annual retention compensation, commission-based compensation, and \$5,000 job performance compensation. Virtually all employers offer a benefit package and most offer education funding.

Not only do Alberta and Saskatchewan's public and private sectors pay double-digit-percentage higher wages than does BC's public sector, they also offer attractive recruitment incentives that serve to heighten the competition faced by BC's Health authorities to hire Sonographers.

## 5.5 Overall Comparison between BC Public Sector and its Competitors in BC, Alberta and Saskatchewan

### a) Wages

<sup>30</sup> The BC Government offers loan forgiveness to Sonographers that work in under-served areas in the public sector post-graduation (20% of the Sonographers' BC Student loan for each year of employment, up to five years).

<sup>31</sup> Sonography Canada. Retrieved from <http://www.sonographycanada.ca/Apps/Pages/home-csdms>

Table 5.5.1 displays an at-a-glance consolidation of the earlier described data to reflect the competitive realities faced by BC health authorities when they are trying to fill Sonography vacancies. BC's students, new graduates and existing public sector employees are well aware of the dramatically higher compensation being offered by private clinics in BC and by Alberta's and Saskatchewan's public and private sectors. For example, Sonographers on Sonography Canada's email distribution list often receive emails with these postings. The colour-highlighted figures are referenced in Section 5.6.



**Table 5.5.1 - Summary of wages for Sonographers in entry-level positions<sup>i</sup>**

	Starting Wage	Amount by which rate exceeds BC public sector starting wage		Top Wage	Amount by which rate exceeds BC public sector top wage	
		\$	%		\$	%
<b>BC public</b> (HSPBA)	\$29.71	0	0	\$37.02	0	0
<b>BC private</b> (M-F daytime rates):						
Lowest	\$32.00	\$2.29	7.7%	\$37.57	\$0.55	1.5%
Highest	\$40.35	\$10.64	35.8%	\$42.84	\$5.82	15.7%
<b>Average</b>	<b>\$36.13</b> (average of 5 clinics)	<b>\$6.42</b>	<b>21.6%</b>	<b>\$41.10</b> (average of 4 clinics)	<b>\$4.08</b>	<b>11.0%</b>
Alberta	\$39.27	\$9.56	32.2%	\$50.64	\$13.62	36.8%
Saskatchewan	\$42.05	\$12.34	41.5%	\$45.05	\$8.03	21.7%
Lowest	\$37.50	\$7.79	26.2%	\$51.49	\$14.47	39.1%
Highest	\$50.00	\$20.29	68.3%	\$65.00	\$27.98	75.6%
<b>Average</b>	<b>\$43.29</b> (average of 5 clinics)	<b>\$13.58</b>	<b>45.7%</b>	<b>\$57.12</b> (average of 4 clinics)	<b>\$20.10</b>	<b>54.3%</b>

**Notes:**

<sup>i</sup> Data taken from pay stubs, collective agreements, and job postings, including several from the Sonography Canada website posted from 2014 – 2016.<sup>32</sup> Where the same employer advertised jobs on this site multiple times, data were taken from the most recent posting.

*b) Recruitment incentives*

Table 5.52, below, displays an at-a-glance consolidation of the earlier described data to reflect the non-wage competitive realities further faced by BC health authorities when they are trying to fill Sonography vacancies. BC's students, new graduates and existing public sector employees are

<sup>32</sup> Sonography Canada. Retrieved from <http://www.sonographycanada.ca/Apps/Pages/home-csdms>

aware of the financial incentives being offered by private clinics in BC and by Alberta's and Saskatchewan's public and private sectors.

**Table 5.5.2 - Summary of non-wage recruitment & retention incentives offered to Sonographers<sup>i</sup>**

	<b>Signing Bonus</b>	<b>Bursary (new grads)</b>	<b>Relocation Assistance</b>	<b>Other</b>
<b>BC public (HSPBA)</b>	None	None <sup>33</sup>	None	Isolation allowance  Education Leave/Allowance per Article 17
<b>BC private (4 clinics)</b>	None	None	None	All offer some education funding. One offers performance bonuses.
<b>Other provinces<sup>ii</sup> – public (1 in SK)</b>	\$5,000	\$5,000	\$2,000	Certification exam costs
<b>Other provinces – private (6 in AB, 1 in SK)</b>	5 of 7 offer. Ranges from \$10,000 to \$75,000. <sup>iii</sup>	None	6 of 7 offer. Ranges from airfare to \$2,000. <sup>iii</sup>	5 of 7 offer additional incentives. <sup>iv</sup>

**Notes:**

<sup>i</sup> Incentives offered to hire sonographers into entry-level positions. Based primarily on job postings from the Sonography Canada website posted from 2014-2016.<sup>34</sup> Where the same employer advertised jobs on this site multiple times, data were taken from the most recent posting.

<sup>ii</sup> Data were used from available postings for jobs in the three western provinces only: BC, AB & SK.

<sup>iii</sup> Some postings merely indicate an incentive is available, others state the amount provided.

<sup>iv</sup> Additional incentives vary among employers, and include: \$1,000 annually for HSA or PSA (Health or Personal Savings Account, respectively), northern living allowance, annual retention compensation, commission-based compensation, and \$5,000 job performance compensation. Virtually all employers offer a benefit package and most offer education funding.

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<sup>33</sup> The BC Government offers loan forgiveness to Sonographers that work in under-served areas in the public sector post-graduation (20% of the Sonographers' BC Student loan for each year of employment, up to five years).

<sup>34</sup> Sonography Canada. Retrieved from <http://www.sonographycanada.ca/Apps/Pages/home-csdms>

## 5.6 Conclusions and Recommendation concerning Compensation

### *Conclusions*

The Sonographer shortage experienced by health authorities is dire.

In the Committee's view, the Sonographers' recruitment and retention issue is compensation-related, and is primarily a wage issue. As long as BC's CICs pay higher wages to Sonographers than those paid by BC's health authorities, competition posed by the CICs will exacerbate Sonographer shortages within the public sector. Sonographers need not relocate outside of BC to be paid significantly higher wages than those paid to Health Authority employees. For the many that have been willing to work in the neighbouring provinces of Alberta or Saskatchewan, there are substantial financial rewards to be realized from much higher wages and possibly from non-wage recruitment incentives. Maintaining the status quo serves to worsen the health authorities' Sonographers' shortage and lengthen patient waitlists.

**The Committee supports the implementation of a market adjustment in the form of a percentage wage increase, across all Sonography classifications' salary structures, as soon as possible.** A market adjustment will enable health authorities to realistically compete to hire Sonographers, as well as retain and improve the morale of their current Sonographers.

Please refer to Sections 1.6 and 8.1 for recommendations under this section.

Please refer to Appendix K for the HSPBA Addendum Re: Preferred Option for Size of Market Adjustment; Moratoriums Concerning Private Clinics.

# Other Recruitment and Retention Considerations

## 6.1 Recruitment and Retention Efforts by Health Employers

Employers have taken steps to address retention consistent with the HSPBA Provincial Collective Agreement. Health authorities have increased part-time positions to full-time in order to make them more attractive to applicants; they have tried to over-hire supernumerary positions above baseline to reduce reliance on casual employees, as well as reducing the amount of time that current employees have to work on-call.

Existing employees have the opportunity to work overtime to augment their incomes, though the Health authorities recognize that this is not a long-term solution to be relied upon. Interest in voluntary overtime generally tends to decline after a period of time (particularly for weekend shifts) and employers become concerned about burn-out and the potential of repetitive strain injuries.

Employers advertise their vacancies extensively; Health authorities maintain active vacancy postings on their websites, as well as advertising on Sonography Canada's web page and other external sources. Where possible, employers will fund Sonographers to attend conferences or other educational opportunities. This past year, for instance, Island Health sent two sonographer representatives to Sonography Canada's conference in Ottawa.

Employers are generally not successful at recruiting sonographers from other jurisdictions, but they are relatively successful at recruiting the BCIT students that train at their sites.

## 6.2 Exit Interviews

Some Health authorities have also made efforts to track reasons for why Sonographers leave their public sector positions. The Committee is advised that a number of Sonographers resign and take employment with other employers, and a number are lost to other provinces or even out-of-country. By way of example, IHA advises that the Sonographers that have left their employ since 2013 gave the following reasons for terminating their employment:

- 5 retired
- 1 returned to school
- 4 resigned for new job within BC
- 4 resigned for new job outside the province
- 3 resigned for new job outside the country
- 3 resigned, moved
- 1 resigned (no further information provided)
- 4 no reason given

In exit interviews conducted by NHA, Sonographers leaving their positions provided varied reasons for their departures, including:

- lack of funding for continuing education;
- the physical demands of the position and the corresponding repetitive strain injuries;
- work load;
- compensation discrepancies between BC and Alberta in both the public and private sectors;
- the availability of locum work for substantially higher pay; and
- insufficient practice support for Sonographers in smaller communities to further their practices because no physician is available or there are not enough varied exams to assist in their development.

NHA projects that over the next five years, it will lose three Sonographers per year to either retirement or terminations for other reasons.

### 6.3 Repetitive Strain Injuries

A 2014 report prepared by the Health Sciences Association of BC<sup>35</sup> stated:

It is widely acknowledged that sonographers in general are at risk for developing work-related musculoskeletal disorders such as inflammation of the tendons (tendonitis) or tendon sheaths (tenosynovitis), bursitis, muscle strains, and pathology of the nerves in the upper extremities, neck, and back.

According to a study conducted by the Society of Diagnostic Medical Sonography published in 2000 (and supported by numerous other studies), more than 80% of sonographers were scanning in pain and 20% of those eventually experienced a career-ending injury. On average, within 5 years of entering the profession, sonographers were experiencing pain while scanning. (Society of Diagnostic Medical Sonography. Sonography Benchmark Survey, Dallas, Texas; 2000).

In 2002 a survey of BC Sonographers – part of a joint project funded by the HSA and WorkSafe BC - found that 91% of sonographers had reported work related musculoskeletal injuries at some point.

Medical literature suggested that 80% of sonographers were seeking medical treatment for MSIs, and many either missed work due to symptoms (17%), reduced their duties (15%) or used sick leave (21%) or vacation days (12%) to recover.

A 2014 article published in “Reports in Medical Imaging”, titled “Work-related musculoskeletal disorders in sonographers: a review of causes and types of injury and best practices for reducing injury risk”<sup>36</sup>, reported that:

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<sup>35</sup> Appendix E

<sup>36</sup> Appendix J

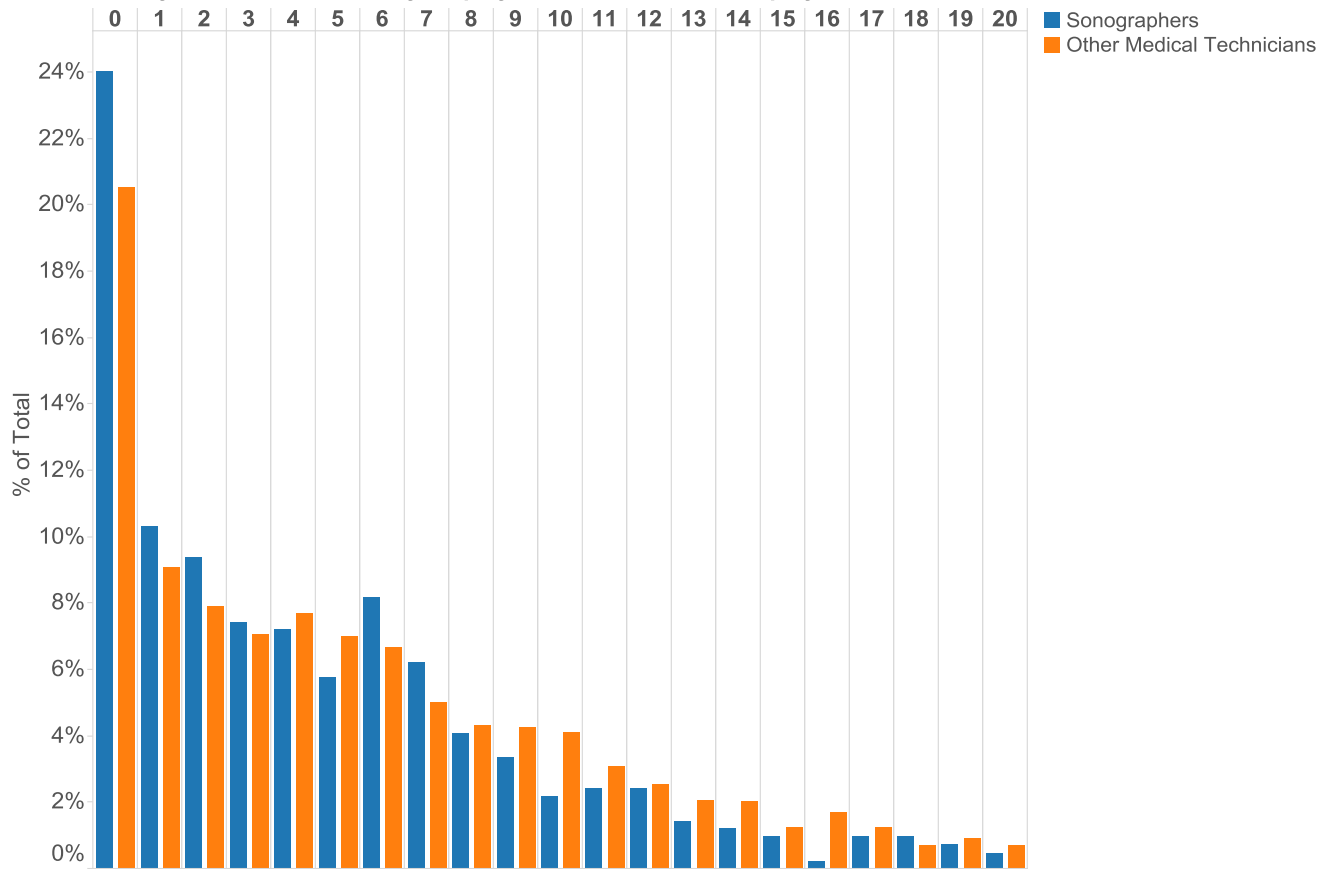
Work-related musculoskeletal disorders in sonography professionals have a reported incidence of 90%. These injuries have a financial and emotional impact on the worker and affect workplace productivity and quality patient care.” It concluded that work-related musculoskeletal disorders “among sonographers can impact the quality of patient care, can have a financial impact on both the ultrasound department and the individual worker, and can negatively affect the morale of the workplace.

Since Sonographers experience a very high injury rate, especially from overuse injuries and repetitive strain injuries, it is not a long-term solution to require current sonographers to work overtime as a strategy to address the shortage or to reduce patient wait lists.

Figure 6.3.1 presents the percentage of employees who took a specific number of sick days. Sonographers and Other Medical Technicians had similar sick day distribution. Figure 6.3.2 shows, that until 2015, a higher percentage of Sonographers, over the comparator group, took Workers’ Compensation Leave.

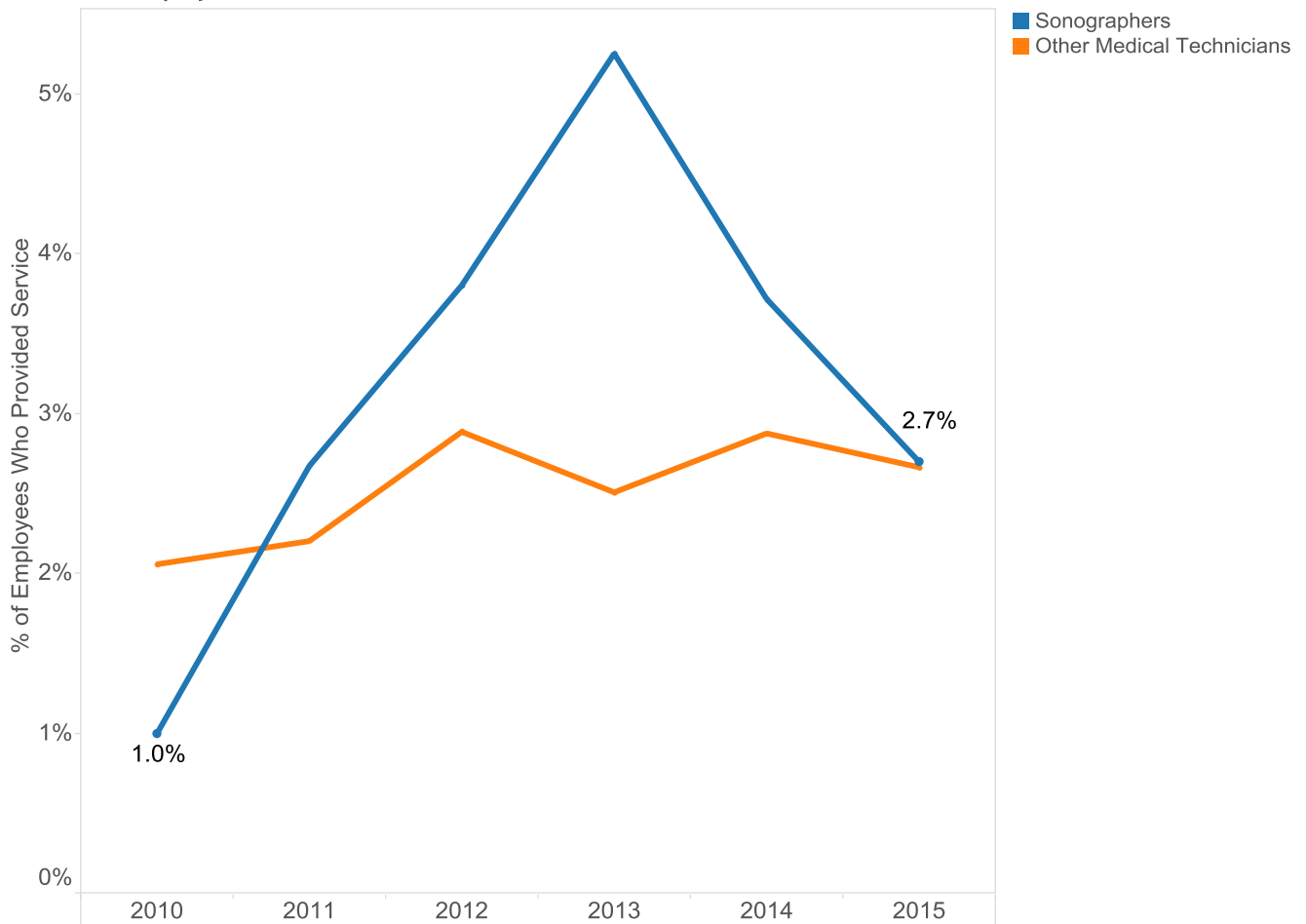
**Figure 6.3.1 – Number of Days Sick Leave Taken by Employee, Percent of Total Employees, 2015**

Number of Days Sick Leave Taken by Employee, Percent of Total Employees, 2015



**Figure 6.3.2 – Percent of Employees who Took Workers' Compensation Leave in a Given Year**

Percent of Employees Who Took WCB





## **6.4 Competition for Sonographers between public and private sectors**

BC's Medical Services Commission currently has a moratorium until June 1, 2017 on approving new private ultrasound licences. As of April 27, 2016, however, the Medical Services Commission will be accepting applications to expand current private ultrasound licences. See Appendix D for additional information.<sup>37</sup> In it, the reader will see that Lower Mainland Imaging reports that certain mitigation steps have been taken to strategize long term solutions to the sonographer staffing challenges. One such step is the Medical Services Commission moratorium on approval of new ultrasound facilities.

Please refer to Appendix K for the HSPBA Addendum Re: Preferred Option for Size of Market Adjustment; Moratoriums Concerning Private Clinics.

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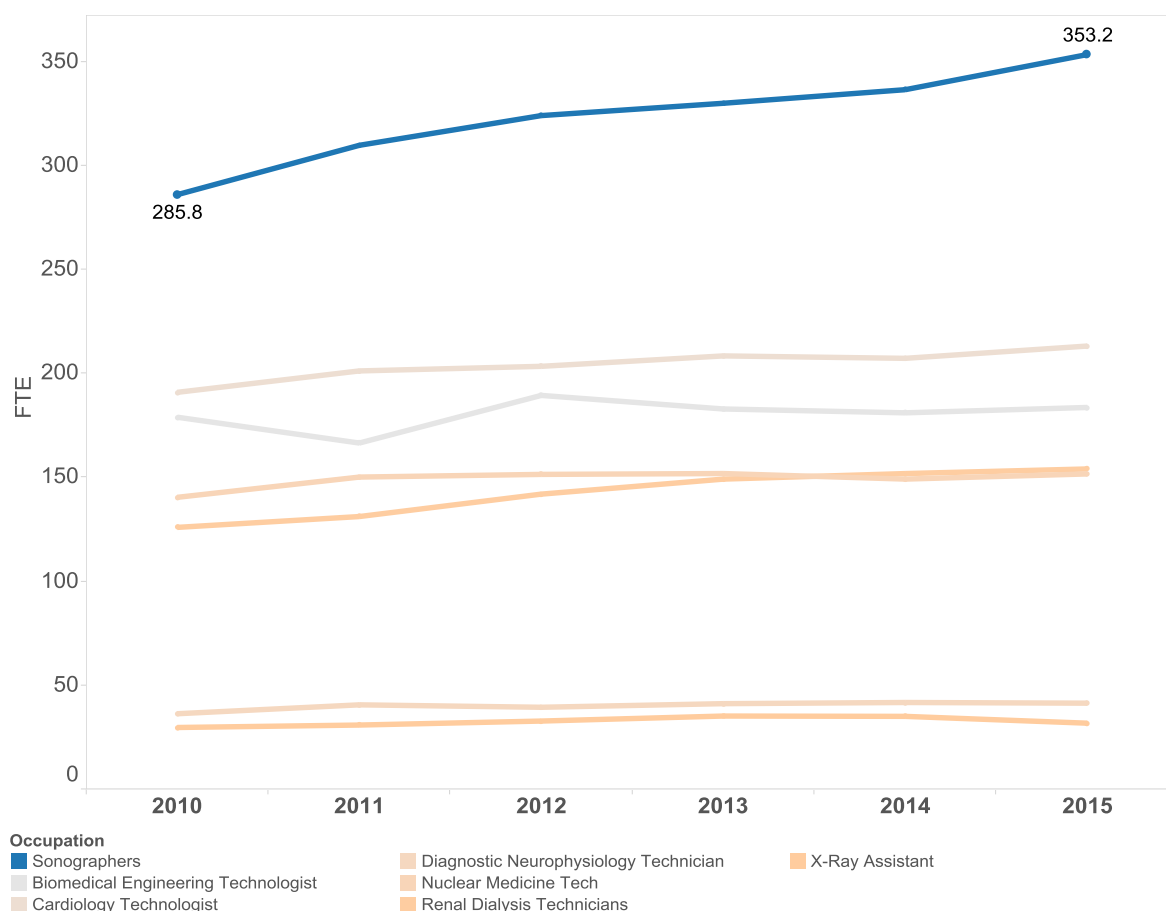
<sup>37</sup> Appendix D

## Data

The following tables and graphs are generated from data derived from HSCIS. HSCIS is a reporting system for all health employers in BC who receive over \$250,000 in funding from the Ministry of Health or are a member of HEABC. HSCIS maintains a comprehensive inventory of labour cost information on workers in the health system, including wage rates, paid hours and benefits information. Additionally, HSCIS collects data on the demographic attributes of health care employees such as their age, gender, years of seniority and health care employment status.

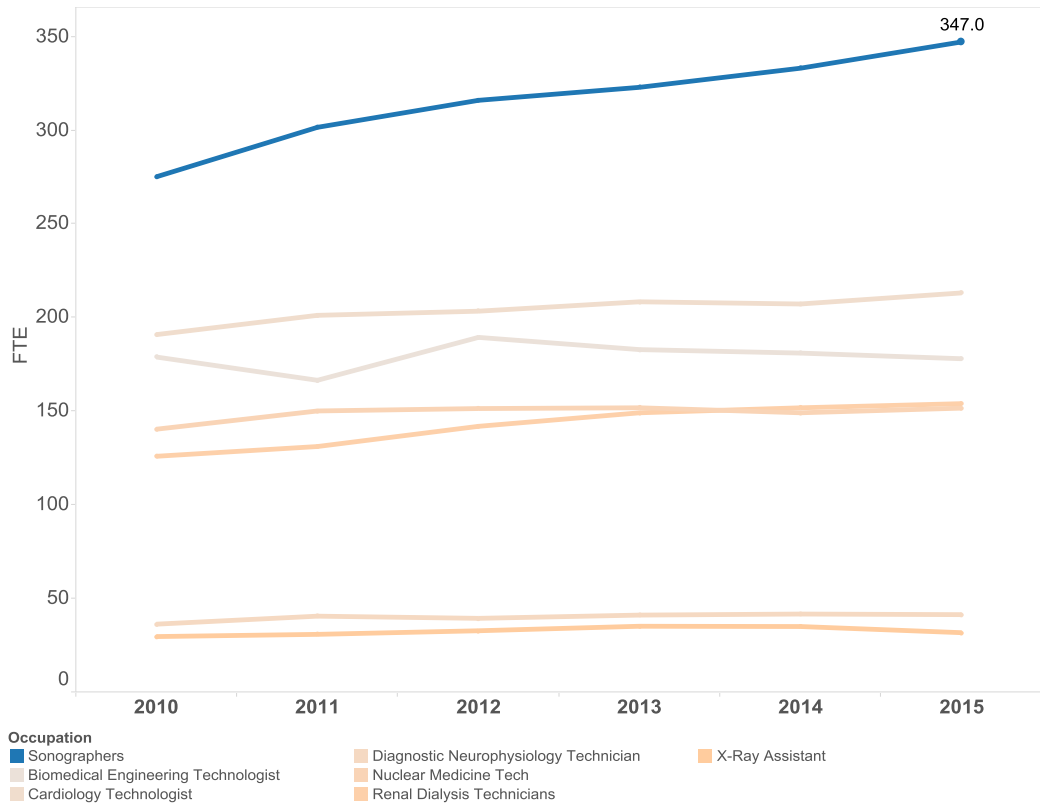
In a number of the charts below, Sonographers are compared to other medical technicians. Unless otherwise specified, these other medical technicians include Biomedical Engineering Technologists, Cardiology Technologists, Diagnostic Neurophysiology Technicians, Medical Radiation Technologists, Medical Technologists, Nuclear Medicine Technicians, Renal Dialysis Technicians and X-Ray Assistants.

**Figure 7.1.1 – FTE Trend, 2010-2015**

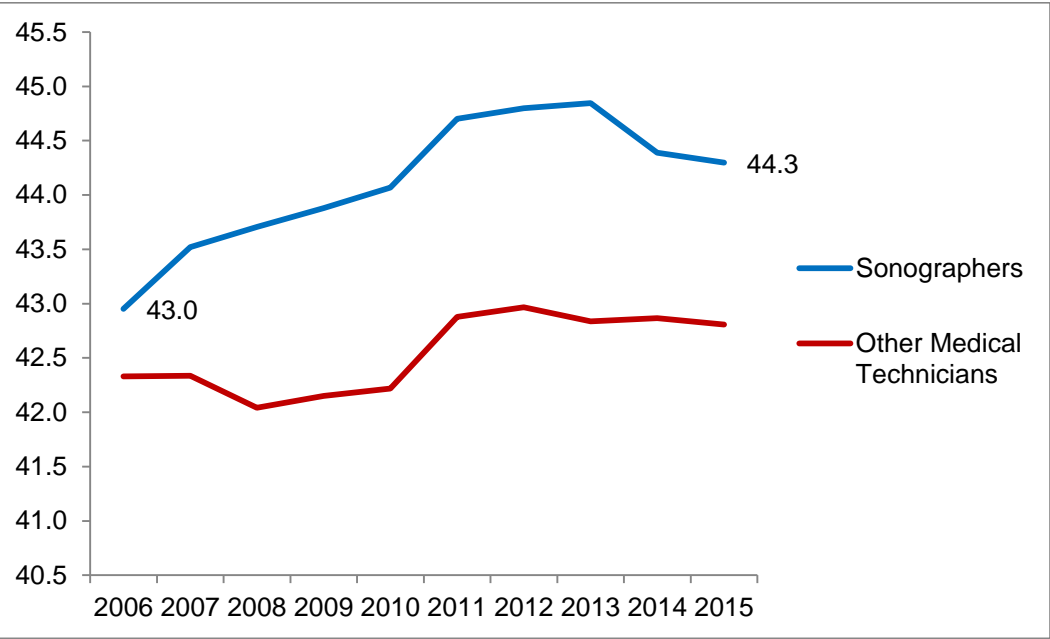




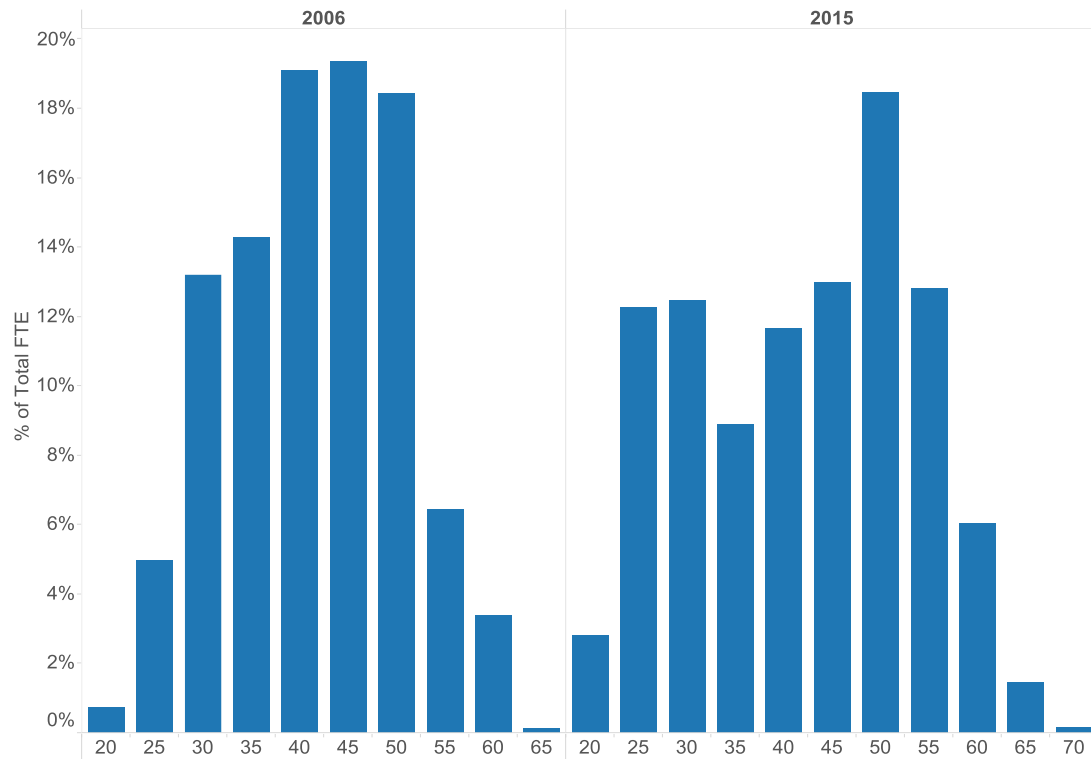
**Figure 7.1.2 – FTE Trend, 2010-2015**



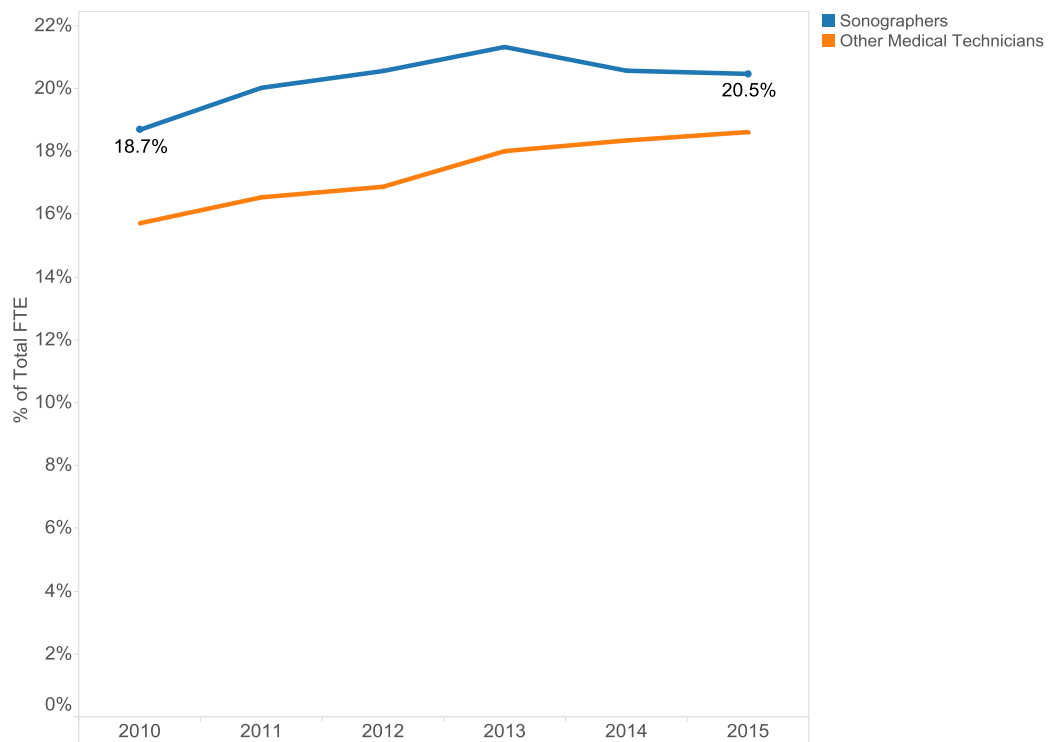
**Figure 7.1.3 - Average Age of Diagnostic Medical Sonographers in the Public Health Sector**



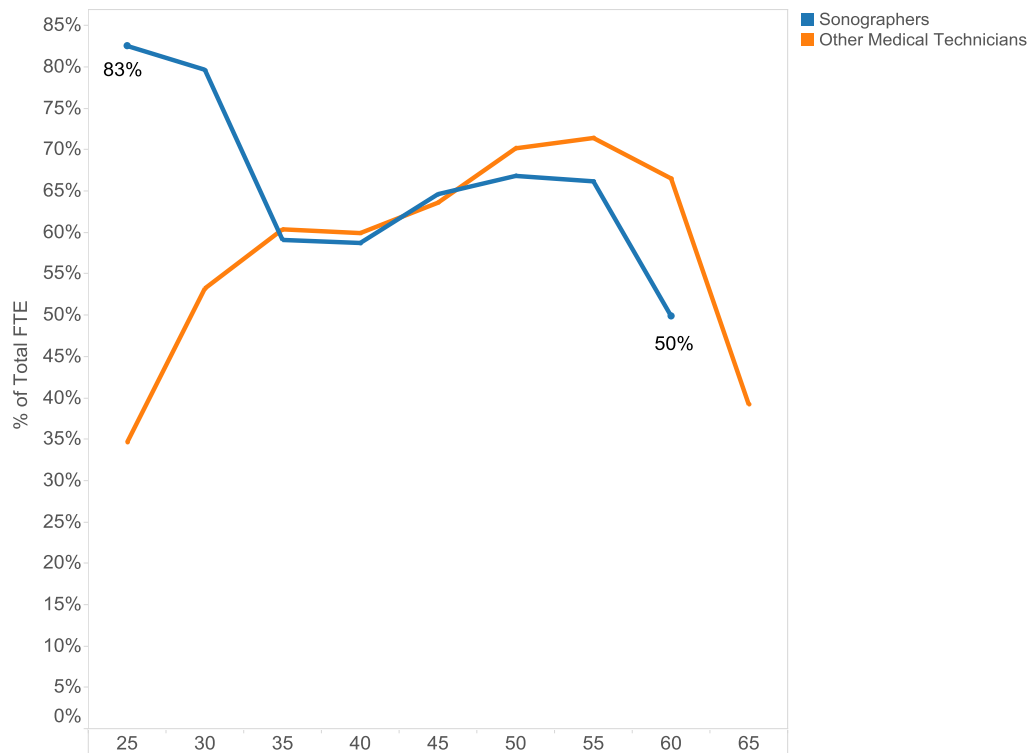
**Figure 7.1.4 - Sonographer Age Distribution Comparison – 2006 vs. 2015**



**Figure 7.1.5 – Percent Aged 55 and Over**



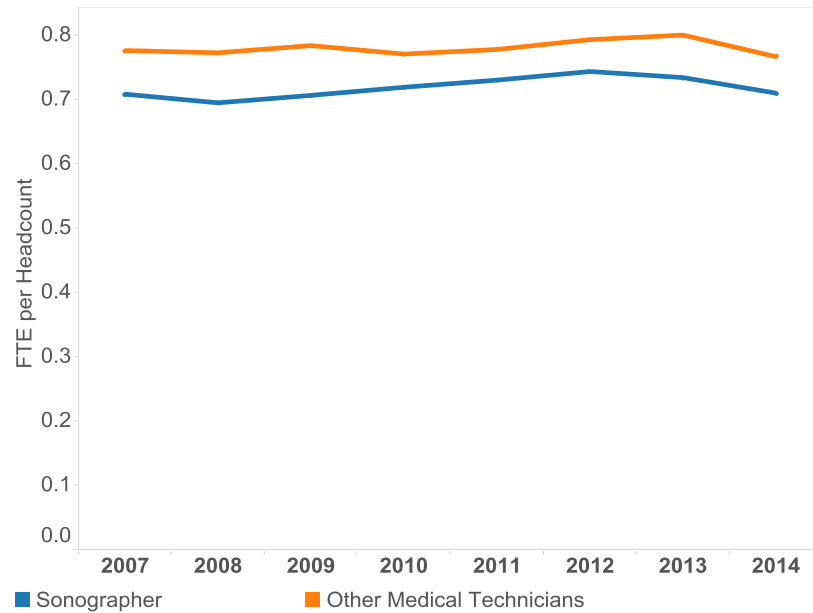
### 7.1.6 - Percent Full-Time by Age



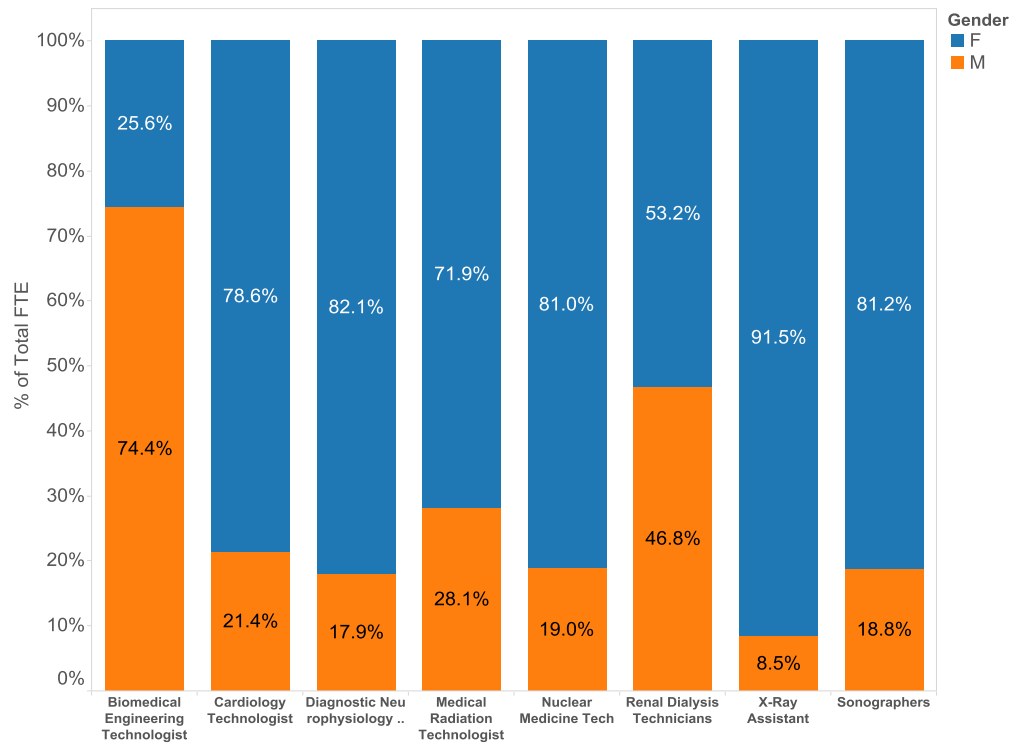
**Figure 7.1.7 - FTE per Headcount<sup>38</sup>**

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<sup>38</sup> FTE per headcount is calculated as the sum of FTE contributed per employee, but counting only the headcount and FTE contribution for employees who worked the entire year

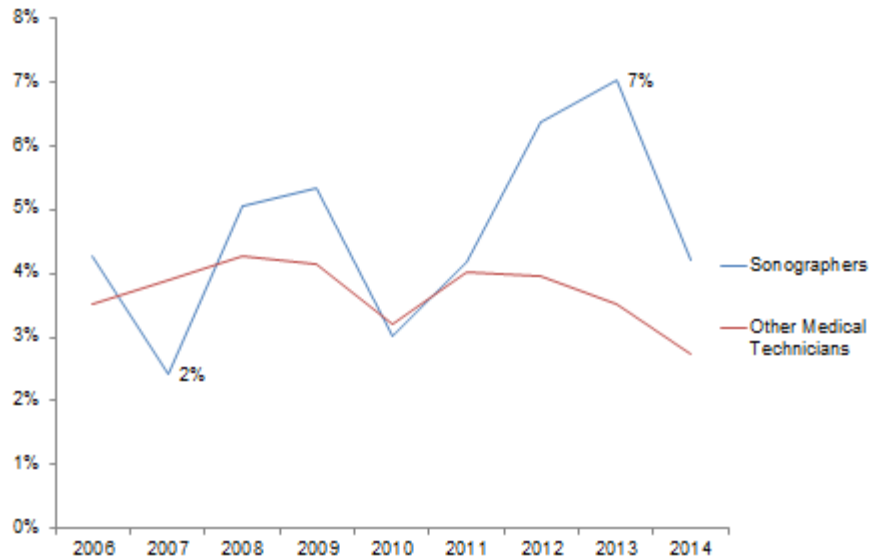


**Figure 7.1.8 - Gender Breakdown**

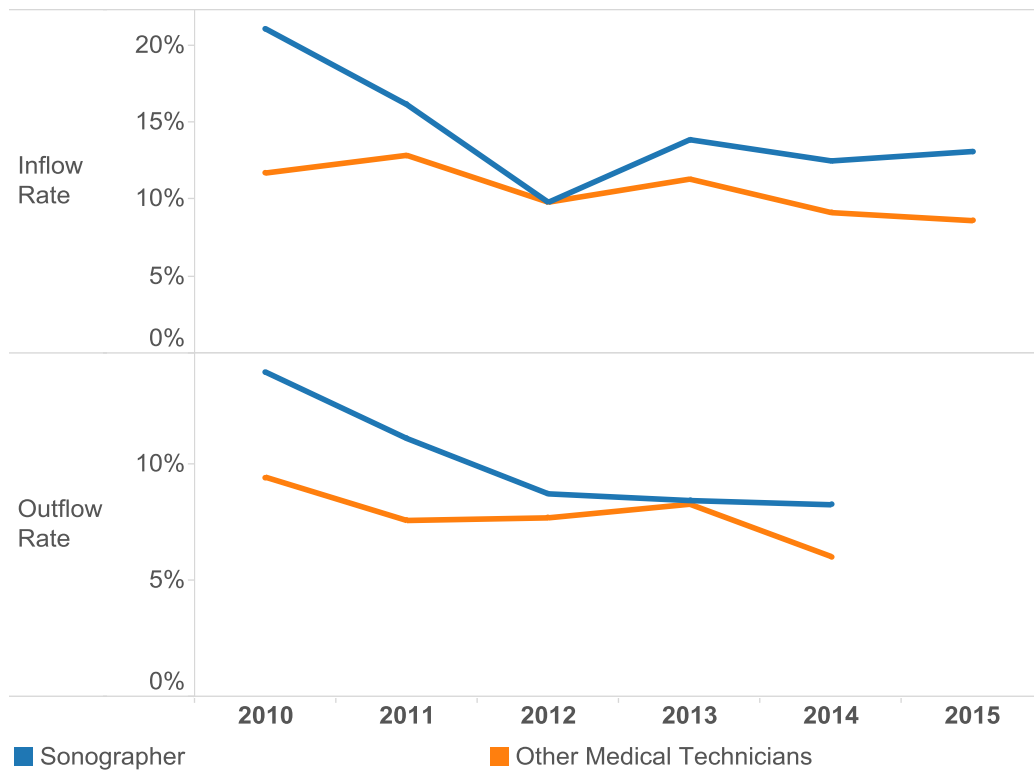


**Figure 7.1.9 – Employment Downgrade Rates**

## Employment Downgrade Rates



**Figure 7.1.10 - Inflow and Outflow Rates**



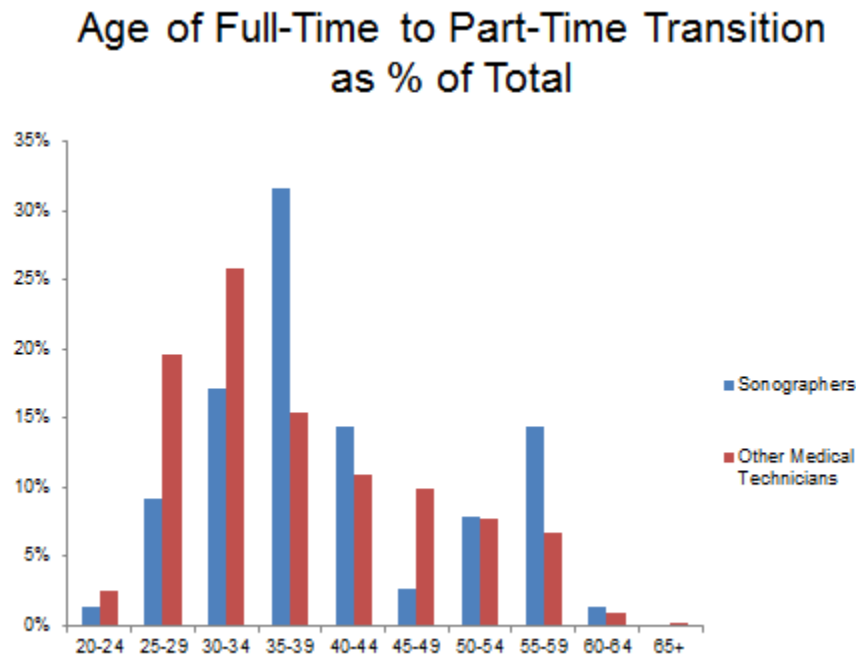


Sonographer inflow is defined as someone not working as a sonographer one year and working as a sonographer the next. The first year they start working as a sonographer, they will be counted as inflow. Inflow rates are calculated by dividing the number of sonographers who provided service with the number of sonographers who in flowed.

Sonographer outflow is defined as someone working as a sonographer one year and not working as a sonographer the next. The last year they worked as a sonographer, they will be counted as outflow. Outflow rates are calculated by dividing the number of sonographers who provided service with the number of sonographers who outflowed.

From 2010 to 2014, 244 sonographers outflowed, or left sonography. Statistics on these 244 sonographers are above.

**Figure 7.1.11 – Age of Full-Time to Part-Time Transition as % of Total**



**Figure 7.1.12 - Sonographer Outflow, 2010 to 2014 (n=244)**

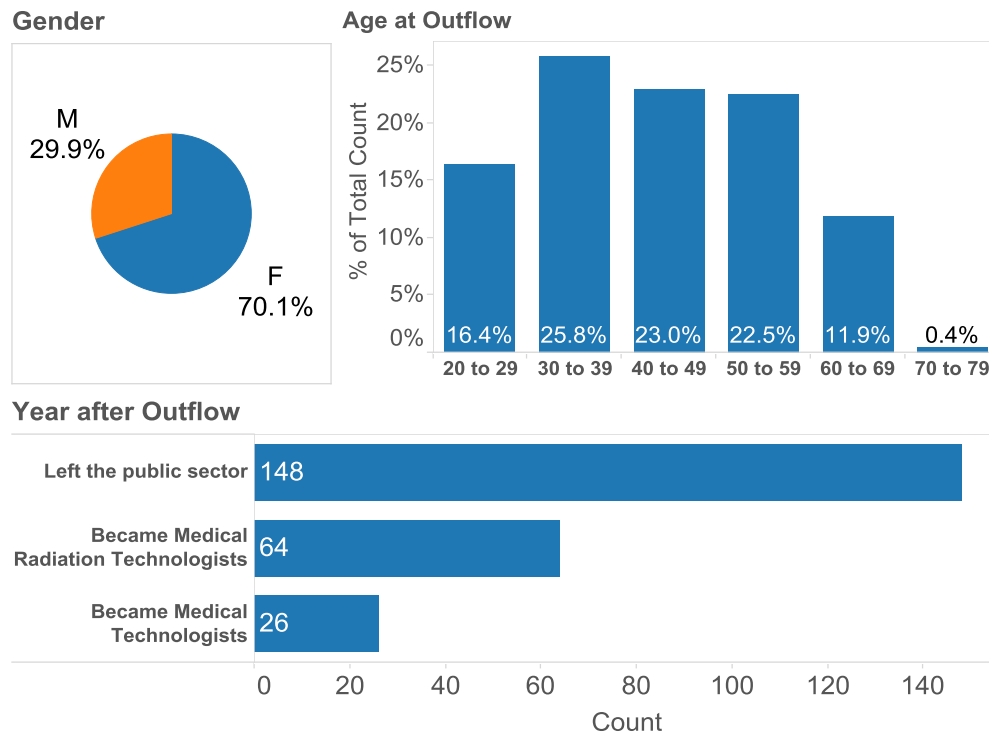
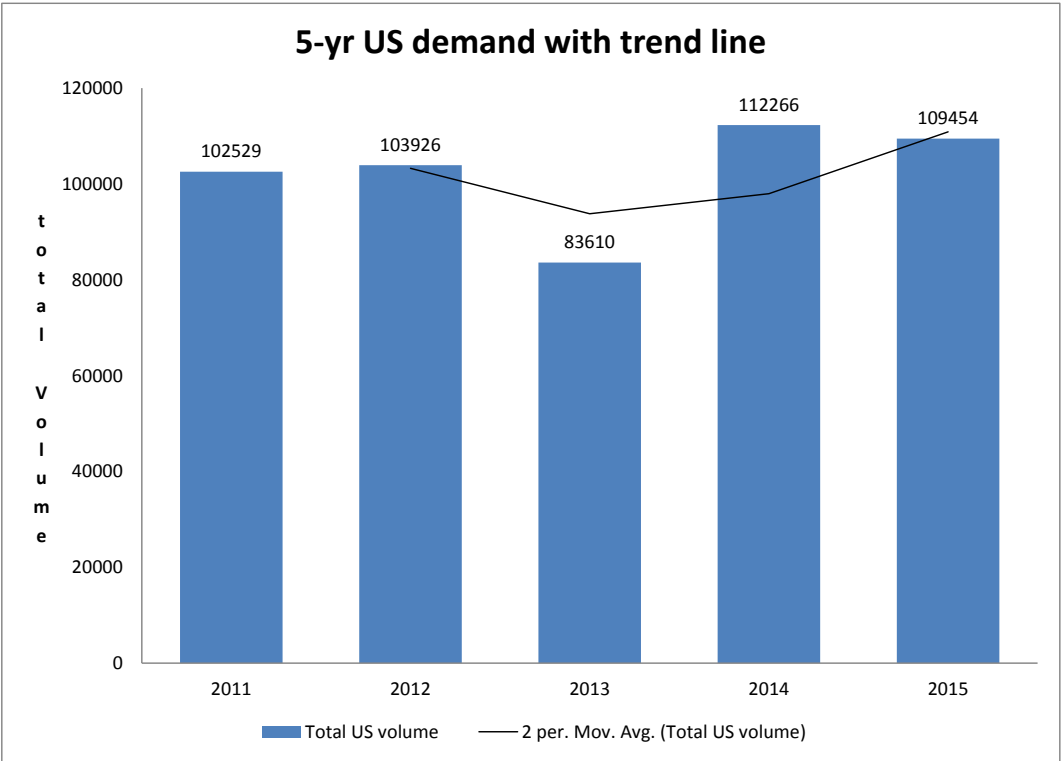


Figure 7.1.13 - VIHA 5-Year Trend for Procedures Performed



**Figure 7.1.14 - NHA's Projected Demand for Sonographers 2016-2021**

Occupation:

Sonography

\* Reflects Regular Positions Only

		2016	2017	Projections			
				2018	2019	2020	2021
BEGINNING OF YEAR PROFILE							
Headcount Regular Staff at Beginning of Year		18	19	19	19	19	19
Vacant Postings		7	8	9	11	12	14
DEMAND							
Change in Demand	6.00%	2	2	2	2	2	2
EMPLOYMENT GAINS							
External Hires into Regular Positions		2	2	2	2	2	2
Advanced Hires		1	1	1	1	1	1
Convert from Casual		1	1	1	1	1	1
Department Transfer In		0	0	0	0	0	0
		4	4	4	4	4	4
Return from Leave - LTD	8.34%	0	0	0	0	0	0
Return from Leave - Maternity & Paternity Leave	69.75%	2	1	1	1	1	1
Return from Leave - Other Leave (Unpaid)	0.00%	0	0	0	0	0	0
Training Seats		0	0	0	0	0	0
Total Recruitment Gains		6	5	5	5	5	5
EMPLOYMENT LOSSES							
Retirements	Based on projection of 5 regular staff retiring during	1	1	1	1	1	1
Convert to Casual		0	0	0	0	0	0
Terminations - Resignations and Leaving NH or Leaving Job Family	11.00%	2	2	2	2	2	2
Terminations - Leaving Department		0	0	0	0	0	0
		3	3	3	3	3	3
LTD & Unpaid Sick Leave	1.74%	0	0	0	0	0	0
Maternity & Paternity Leave	10.00%	2	2	2	2	2	2
Personal Leave	0.00%	0	0	0	0	0	0
Total Employee Losses		5	5	5	5	5	5
ANNUAL OUTCOMES							
Net Employee Gain/Loss During Year	Total Recruitment Gains - Total Employee Losses	1	-0	0	0	0	0
Employees at End of Year	Employees at Beginning of Year + Net Gain/Loss	19	19	19	19	19	19
Annual Surplus/Gap	Demand - Supply (Does not include vacant carry over)	-1	-2	-2	-2	-2	-2
Staffing Surplus/Gap	Net Gain in Staff - Change in Demand - Vacancies	-8	-9	-11	-12	-14	-16
Total Employment Gains Required		12	6	6	6	6	6
Total Employment Gains Required Over Next 5 Year Period							40

## Committee's Recommendations

As outlined throughout this report, several factors are contributing to BC's Sonographer shortage. As such, the Committee foresees a multi-faceted approach spanning over some years will be required to fully address this issue. The Committee has identified multiple stakeholders that need to be engaged to respond to the sonographer shortage, including Employers, Unions, Ministry of Health, Ministry of Advanced Education, BCIT, and the Public Sector Employers Council ("PSEC"). Accordingly, the Committee recommends the following steps be taken:

### 8.1 Short-term (within one year)

The Committee recommends that the following measures be implemented immediately to address sonographer shortages in the public sector:

- **MoH/PSEC** should approve a market adjustment for Diagnostic Medical Sonographers to reduce the gap in wages between the public and private sector and inter-provincially. The Committee recommends that this market adjustment be in the form of a percentage increase applied across all Sonographer classifications' salary structures. Further, the Committee recommends that this market adjustment be implemented as soon as possible so as to enable BC's Health authorities to more effectively recruit and retain Sonographers, including those soon to graduate from BCIT's Sonography program (November 2016). It is the Committee's view that a market adjustment will have the most immediate effect on the Sonographer shortage within Health authorities.
- **BCIT** could significantly increase (ideally double) the number of training spaces in its Diagnostic Medical Sonography Diploma program starting in September 2016. This could be achieved by offering both day and evening courses, running the program over summer months; doing so would increase the normal supply of sonographers from November 2018 onwards.
- **BCIT** could maintain the existing two year program for some sonographers, but also introduce a shorter, fast-track program by creating separate cardiac and general sonographer streams.
- **BCIT** could decrease clinical placement length by offering students more time in its simulation lab. If that lab ran longer hours every day of the week, students could bring in family members, friends who can sign a waiver and students may practice their skills.
- **Health authorities**, with **Ministry of Advanced Education** and **BCIT** assistance, could take immediate steps to train existing medical imaging staff to perform ultrasound through one-year, in-house programs that use a distance education model for the didactic portion of training.

- **Health authorities**, at their discretion, can work with the **HSPBA** to offer recruitment incentives on a without prejudice/without precedent basis (e.g. signing bonuses, education funding linked to return-to-service agreements, etc.).
- **Ministry of Advanced Education** could consider offering government-funded bursaries for students enrolled in the Diagnostic Medical Sonography Diploma program.

Please refer to Appendix K for the HSPBA Addendum Re: Preferred Option for Size of Market Adjustment; Moratoriums Concerning Private Clinics.

## 8.2 Medium-term (one to two years)

The Committee recommends that the following measures be implemented as soon as possible and ideally within the next one to two years:

- **BCIT** could continue to increase the intake of students into the Diagnostic Medical Sonography Diploma program.
- **BCIT** could allow **Health authorities** to sponsor seats in the Diagnostic Medical Sonography Diploma program for existing Health Authority employees. Employees enrolled in those seats could be subject to return-to-work agreements.
- **Health authorities** could use Burwin Institute programs or a program similar to Northern Health Authority's Sonography Training at Rural Sites ("STARS") to address shortages and retention issues in rural and remote communities.

## 8.3 Long-term (two to five years)

The Committee recommends that the following measure be implemented as a long-term solution to address sonographer shortages in the province:

- **MoH and Ministry of Advanced Education** could consider creating a second Diagnostic Medical Sonography Diploma program located outside of Metro Vancouver. This approach has been successful in dealing with the previous chronic shortage of medical laboratory technologists and x-ray technologists. This second program could be the standard two-year program, or it could offer a one-year program geared to train current medical imaging technologists to perform ultrasonography only, or in addition to their current medical imaging modalities. If situated in an underserved area, it could assist with recruitment by training local students who are more likely to remain in the area.

## 8.4 Key Considerations

While the Committee is eager to have these recommendations implemented, it would be remiss not to acknowledge certain challenges that will arise in employing these proposed measures:

- These recommendations will require the cooperation and support of BCIT, which may include running a training program on evenings and weekends and throughout the summer months.
- As the province succeeds in addressing the new graduate shortage in BC, the market will correct itself and Health authorities will have Sonographers being paid at higher rates than other in-demand technologists in the future.
- Since Sonographers experience a very high injury rate, especially from overuse injuries and repetitive strain injuries, it is not a long-term solution to require current Sonographers to work overtime as a strategy to address the shortage or to reduce patient wait lists.
- While not identified as a "risk", the parties may need to address local modifications of Miscellaneous Provision 2(h) of the HEABC/HSPBA Provincial Agreement and are prepared to do so on a strictly without prejudice basis.

## 8.5 HEABC/HSPBA Recruitment and Retention Committee Representatives

Kathy McLennan, HSPBA	Carmen Hamilton, HEABC
Carol Riviere, HSPBA	

### Acknowledgements

The Committee gratefully acknowledges the contributions made to its report by Sue Avery, Zeno Cescon, Gail Craig, Sarah Fleming, Ann Syme, and Scott McCarten.

## **Appendix A: HSPBA 2012-2019 MOU Re: Recruitment and Retention Committee**



**MEMORANDUM OF UNDERSTANDING**  
**between**  
**HEALTH EMPLOYERS ASSOCIATION OF BRITISH COLUMBIA ("HEABC")**  
**and**  
**THE ASSOCIATION**

**Re: Recruitment and Retention Committee**

1. The parties agree to identify and address recruitment and retention challenges of some of the HSPBA professions that may experience skill shortages as well as recruitment and retention issues.
2. The parties further agree that good compensation practices suggest that wage adjustment is a final resort for most employers that is used only when and if other recruitment and retention initiatives have been attempted. Put differently, adjusting wages is ordinarily an appropriate response only when a recruitment and retention issue is primarily a wage issue.
3. The parties recognize the need to foster a workplace that retains and attracts health science professionals required to provide care delivery in BC, particularly in light of the generational transition occurring in our workplaces.
4. The parties agree to establish a recruitment and retention committee that will:
  - (a) Be comprised of no more than three representatives from HEABC and its member organizations and no more than three representatives from the HSPBA.
  - (b) Each party will bear its own costs of participation in the committee. The Committee will be convened at the request of either party.
5. The Committee will be responsible for:
  - (a) Considering initiatives to address concerns about professions which are identified as having retention and recruitment issues (e.g., workplace or academic);
  - (b) Consider initiatives to address employee engagement as a means of addressing identified recruitment and retention issues;
  - (c) Where appropriate, developing a joint proposal requesting a labour market adjustment
  - (d) Submitting the joint proposal to the Ministry of Health (MOH) and Public Sector Employer Counsel (PSEC) for approval. A proposal must:
    - (i) Demonstrate that the issue is wage-related;
    - (ii) Show that other options to mitigate recruitment and retention pressures have been considered;
    - (iii) Provide relevant market data that specifically includes employers likely to recruit from the public sector employer, and employers that the public sector employer has recruited from;
    - (iv) Identify which occupations and the number of employees that will be affected by the adjustment;
    - (v) Identify options for the size of the market adjustments, and identify the risks associated with each of the options; and
    - (vi) Identify the preferred option and strategies to manage any risks associated with that option.
6. No proposal for a labour market adjustment can be implemented without the express written approval of the Ministry of Health and the Public Sector Employers Council Secretariat.

## **Appendix B: Difficult to Fill Vacancy Report: Ultrasonographers 2016 Q1**

**Difficult to Fill Vacancy Report:**  
**Ultrasonographers**  
**2016 Q1**

*Prepared by HEABC*



### **Report Outline**

The Difficult to Fill (DTF) Vacancy Survey is a quarterly survey run by HEABC since September 2001. The purpose of this survey is to provide a snapshot of all DTF vacancies in the health system at the end of each quarter. A DTF vacancy is a job that has been advertised externally and remains unfilled after three months of active recruitment.

### **Vacancy Rate Calculation**

The DTF Vacancy Rate is calculated by dividing the number of difficult to fill vacancies by the sum of the number of difficult to fill vacancies and the total number of active regular employees.

The employee count used in the vacancy rate calculation includes all active employees at the end of the quarter being analysed. An employee is considered active if they have not been terminated and have more than zero regular paid hours since the beginning of the calendar year. As the employee count used in this report is based on occupation, it is possible for one employee to be considered active in more than one occupation in the last year. In this scenario the employee would be counted once in each occupation.

We welcome your comments and feedback on this report. If you have any questions or comments, please contact HEABC's Research & Knowledge Management Department at:

Phone: 604-714-2255

Email: [knowledge@heabc.bc.ca](mailto:knowledge@heabc.bc.ca)



*Prepared by HEABC*

## I.I - Overview for 2016 Q1 Sorted by Number of DTF Vacancies

Top 20 Difficult to Fill Vacancies for the Last Quarter

Occupation	C/A	Perm - FT	Perm - PT	Perm - Total	Temp - FT	Temp - PT	Temp - Total	Total for All	Vacancy Rate
Nurse	N	97	39	136	101	54	155	291	1.19%
Professional/Technical	E	18	0	18	12	1	13	31	1.38%
Information Systems	E	14	0	14	14	0	14	28	5.77%
Nurse	E	15	2	17	6	1	7	24	4.18%
Social Worker	P	16	2	18	5	0	5	23	2.17%
Ultrasonographer	P	12	2	14	5	2	7	21	5.44%
Executive	E	14	1	15	2	0	2	17	1.45%
Director	E	12	0	12	1	1	2	14	1.10%
Physiotherapist	P	4	3	7	6	1	7	14	1.25%
Planner	E	4	0	4	10	0	10	14	7.69%
Programmer/Systems Analyst	E	4	0	4	8	0	8	12	5.15%
Medical Radiation Technologist	P	4	5	9	1	0	1	10	0.74%
Community Health Worker	C	2	4	6	1	2	3	9	0.38%
LPN	N	2	4	6	0	3	3	9	0.22%
Medical Records	F	5	2	7	2	0	2	9	1.79%
Speech/Language Pathologist	P	1	1	2	3	4	7	9	2.99%
Administrative Assistant	E	7	0	7	1	0	1	8	0.97%
Clerk	F	3	1	4	3	1	4	8	0.22%
Clinical Pharmacist	P	4	0	4	3	1	4	8	1.44%
Respiratory Therapist	P	6	0	6	2	0	2	8	0.99%

Top 10 Paramedical Difficult to Fill Vacancies for the Last Quarter

Occupation	C/A	Perm - FT	Perm - PT	Perm - Total	Temp - FT	Temp - PT	Temp - Total	Total for All	Vacancy Rate
Social Worker	P	16	2	18	5	0	5	23	2.17%
Ultrasonographer	P	12	2	14	5	2	7	21	5.44%
Physiotherapist	P	4	3	7	6	1	7	14	1.25%
Medical Radiation Technologist	P	4	5	9	1	0	1	10	0.74%
Speech/Language Pathologist	P	1	1	2	3	4	7	9	2.99%
Clinical Pharmacist	P	4	0	4	3	1	4	8	1.44%
Respiratory Therapist	P	6	0	6	2	0	2	8	0.99%
Genetic Counsellor	P	2	1	3	3	0	3	6	14.63%
Health Record Administrator	P	3	0	3	2	1	3	6	1.68%
Medical Technologist	P	2	2	4	0	1	1	5	0.26%

Prepared by HEABC

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## Overview for 2016 Q1 Sorted by DTF Vacancy Rates

### Top 20 Difficult to Fill Vacancy Rates for the Last Quarter

Occupation	C/A	Perm - FT	Perm - PT	Perm - Total	Temp - FT	Temp - PT	Temp - Total	Total for All	Vacancy Rate
Genetic Counsellor	P	2	1	3	3	0	3	6	14.63%
Clinical Instructor/Coordinator/Supervis.	P	1	0	1	0	0	0	1	9.09%
Supported Employment Worker	C	0	0	0	1	0	1	1	8.33%
Planner	E	4	0	4	10	0	10	14	7.69%
Information Systems	E	14	0	14	14	0	14	28	5.77%
Ultrasonographer	P	12	2	14	5	2	7	21	5.44%
Programmer/Systems Analyst	E	4	0	4	8	0	8	12	5.15%
Mechanic	F	1	0	1	0	0	0	1	5.00%
Combined Laboratory/X-Ray Technolog.	P	1	0	1	0	0	0	1	4.76%
Nurse	E	15	2	17	6	1	7	24	4.18%
Social Service Assistants	F	0	1	1	0	0	0	1	4.17%
Speech/Language Pathologist	P	1	1	2	3	4	7	9	2.99%
Psychologist	P	1	3	4	0	0	0	4	2.72%
Perfusionist	P	1	0	1	0	0	0	1	2.33%
Social Worker	P	16	2	18	5	0	5	23	2.17%
Dental Hygienist	P	0	0	0	0	1	1	1	1.89%
Accountant	E	5	0	5	1	0	1	6	1.87%
Cytotechnologist	P	1	0	1	0	0	0	1	1.79%
Medical Records	F	5	2	7	2	0	2	9	1.79%
Staff Pharmacist	P	0	0	0	0	2	2	2	1.75%

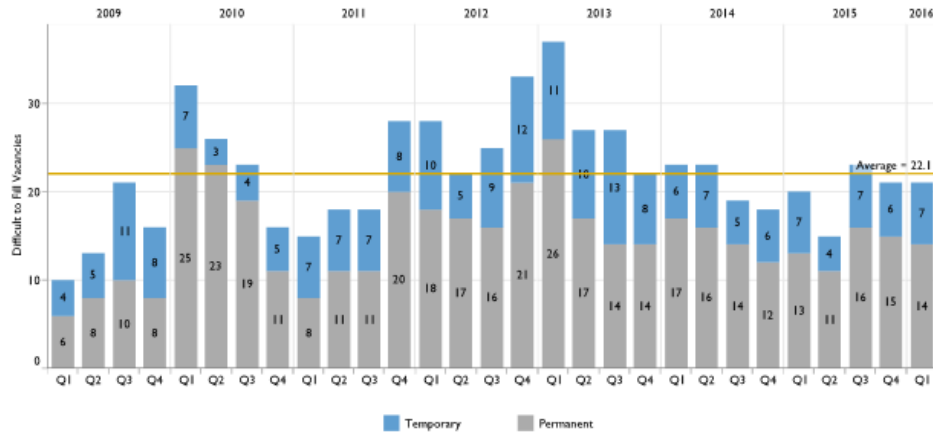
### Top 10 Paramedical Difficult to Fill Vacancy Rates for the Last Quarter

Occupation	C/A	Perm - FT	Perm - PT	Perm - Total	Temp - FT	Temp - PT	Temp - Total	Total for All	Vacancy Rate
Genetic Counsellor	P	2	1	3	3	0	3	6	14.63%
Clinical Instructor/Coordinator/Supervisor	P	1	0	1	0	0	0	1	9.09%
Ultrasonographer	P	12	2	14	5	2	7	21	5.44%
Combined Laboratory/X-Ray Technologist	P	1	0	1	0	0	0	1	4.76%
Speech/Language Pathologist	P	1	1	2	3	4	7	9	2.99%
Psychologist	P	1	3	4	0	0	0	4	2.72%
Perfusionist	P	1	0	1	0	0	0	1	2.33%
Social Worker	P	16	2	18	5	0	5	23	2.17%
Dental Hygienist	P	0	0	0	0	1	1	1	1.89%
Cytotechnologist	P	1	0	1	0	0	0	1	1.79%

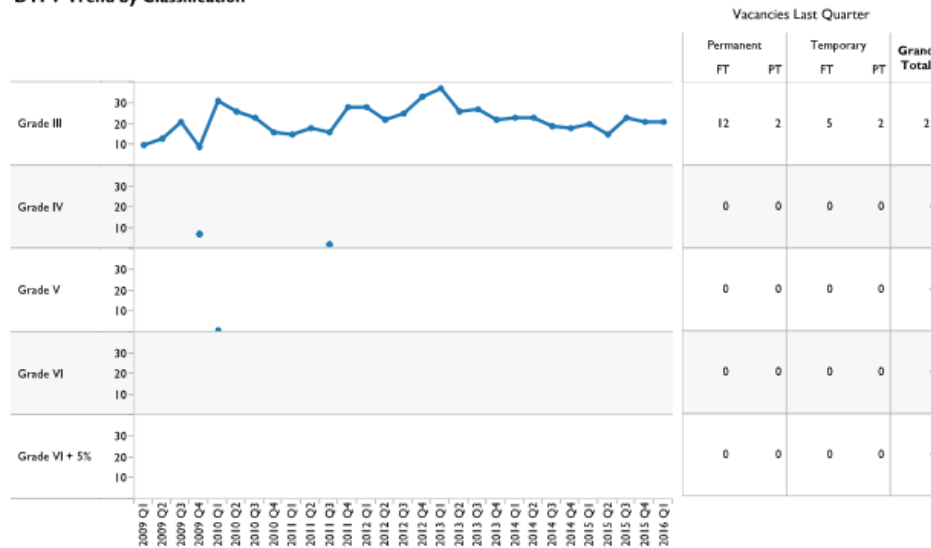
Prepared by HEABC

## Ultrasonographer

DTFV Trend: 2009 Q1 - 2016 Q1



DTFV Trend by Classification

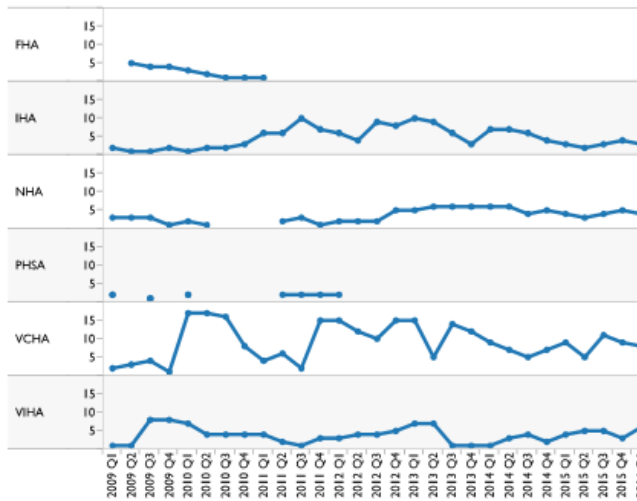


Please note: A break in the trend line denotes a quarter with zero vacancies.  
Only classifications that have had DTFVs since 2008 are shown in the trend lines above.

Prepared by HEABC

## Ultrasonographer

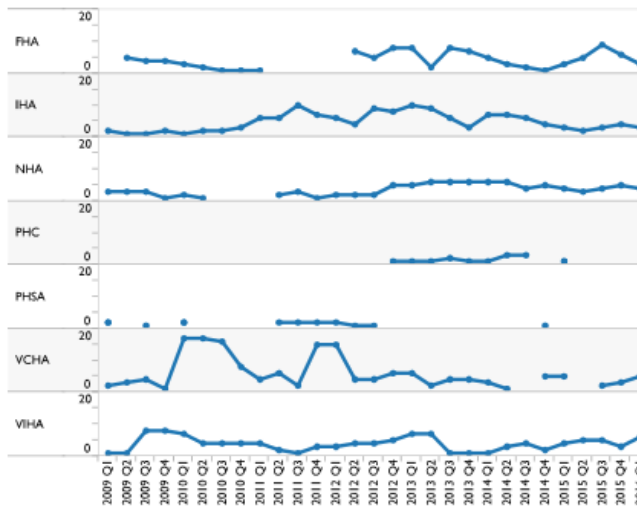
**DTFV Trend by Health Authority - Paying Agency**



**Vacancies Last Quarter**

Permanent		Temporary		Grand Total
FT	PT	FT	PT	
0	0	0	0	0
1	1	0	1	3
2	1	1	0	4
0	0	0	0	0
5	0	2	1	8
4	0	2	0	6

**DTFV Trend by Health Authority - Location of Vacancy**



**Vacancies Last Quarter**

Permanent		Temporary		Grand Total
FT	PT	FT	PT	
0	0	2	1	3
1	1	0	1	3
2	1	1	0	4
0	0	0	0	0
0	0	0	0	0
5	0	0	0	5
4	0	2	0	6

Please note: A break in the trend line denotes a quarter with zero vacancies

Prepared by HEABC



## **Appendix C: Northern Health Sonography Snapshot (May 2016)**

# Northern Health Sonography Snapshot

May 2016



## Exit Interviews

Connecting with the supervisors of sonographers who have left our organization - we were able to identify some of the reasons the sonographers left Northern Health. Here are the main themes:

- **Continuing Education**
  - The lack of funding available for continuing educational purposes
  - Apparently there is more education funding available in Alberta.
- **Working Conditions**
  - Reports of strain injuries and subsequently sonographers requiring time off to recoup.
  - There are cases that sonographers are put on long term disability due to the physical nature of the work.
- **Compensation Discrepancy**
  - Wages have been an issue most certainly when BC is compared to Alberta and private companies.
    - The difference is significant at \$15 per hour more as a starting wage in Alberta.
      - A sonographer can garner \$50 per hour working in private clinics in Alberta whereas in BC for the same work they start out at \$35 per hour.
  - Locum work is readily available in the sonographers' communities that pays substantially more than their current employment.
- **Job Market Options**
  - There are more job opportunities in Alberta in what are considered more desirable communities.
- **Practice Support**
  - There are sonographers who really have an interest in working with a radiographer and some of our smaller sites do not have radiographers on staff.
  - Subsequently, the sonographers find it very difficult to further their practice as no physician is available to support their development.
  - Some sonographers have travelled to larger centres in Northern Health in order to access educational support with radiographers; however, once onsite the sonographers' time was redirected to scan patients and as a result no education was provided.
  - Some sonographers felt that a significant number of the scans they performed were not varied enough. As a result their work becomes mundane and they think they are losing their scope of practice.
- **Inadequate No. of Staff**
  - Some sonographers have been very dissatisfied with the high number of patient loads and feel that this is having a negative impact on the quality of their work.
  - They also shared that because in the more remote sites support is limited and they were not able to send patients to a private clinic or larger centre. The end result was experiencing a good deal of frustration.

## Ultrasound Volumes

Exam Type	Exam Description	14/15 YE Actual	13/14 YE Actual	12/13 YE Actual	11/12 YE Actual	10/11 YE Actual	09/10 YE Actual	08/09 YE Actual	07/08 YE Actual	06/07 YE Actual
Ultrasound		945	776	822	784	877	738	789	526	445
	In House Exams client ultrasound	920	747	774	740	858	697	715	503	427
	In House Exams I/P-ultrasound	27	23	28	16	19	41	54	23	18
		53,429	56,146	55,830	53,543	52,114	47,359	45,516	41,562	39,499

Notes:

- 5.9 percent increase between 2012/13 to 2013/14
- 4.2 percent increase between 2011/12 to 2012/13
- The drop in 2014/15 is due to a lack of staff
- We do not have completed date for 2016 yet

## Wait Time for Procedures

Number of Days Patients are Waiting for Procedure

	CT Scan	Echo	OB US	NON OB US	Mammo Screening	Mammo Diagnostic	Nuc Med Non Cardiac	Nuc Med Cardiac	MRI	Holter Monitor	Pulmonary	Cardiac Stress
<b>Location</b>												
Prince Rupert	1	32	15	15	14	20						
Kitimat			8	7								
Terrace	76	31	72	71	8	55	32	81				
Smithers		30	15	18	2	2						
Hazelton			26	26								
Vanderhoof			14	14								
Quesnel	5	20	10	10	5	4						
Prince George	1	50	50	50		7	1	7	134	20* *	0** *	0
Dawson Creek	1	7	8	17	9	1						
Fort St. John	0	42	28	28	0	1	*	*				
Fort Nelson			23	23								

Notes:

Days in **bold** indicate patients waiting beyond recognized acceptable wait times

Facilities not listed only offer general x-ray

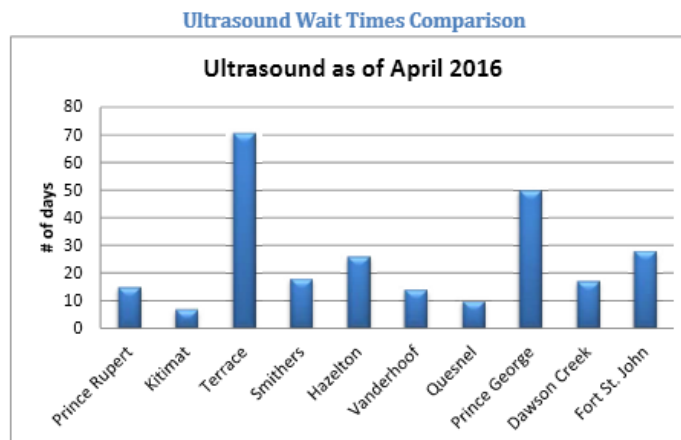
Please see facility tab for site specific information, issues, and actions

**Days = calendar days**

\* No Internist

\*\* Requisitions being filled starting the end of January

\*\*\* Requisitions being filled starting the end of February



## Inventory of Ultrasound Machines

Modality	HSDA	LHA	Site	Area	Device Type	Maker	Model	Purchase Date	Planned Replacement Year	Actual replacement year	CAR Life Expectancy (yrs)	Current Age (yrs)	Remaining Age (yrs)
US	NI	Prince George	UHNBC	Emergency	General-purpose	SonoSite Inc.	180	2/13/2006	2015	2019	8	10	-2
US	NI	Nechako	FLDT	Diagnostic Imaging	General-purpose	Ultrasonix Medical Corp (001334)	Q-Sonic	1/1/2007	2016	2019	8	9	-1
US	NW	Prince Rupert	PRRH	Oncology	Portable	GE	Logiq E	6/11/2007	2016	2017	8	9	-1
US	NW	Upper Skeena	WMH	Diagnostic Imaging	Portable	GE	Logiq E	6/11/2007	2016	2021	8	9	-1
US	NI	Prince George	UHNBC	Diagnostic Imaging	General-purpose	Ultrasonix Medical Corp (001334)	Sonix 02	6/27/2007	2016	2021	8	9	-1
US	NI	Nechako	SLH	Diagnostic Imaging	General-purpose	Ultrasonix Medical Corp (001334)	Sonix 02	6/27/2007	2016	2022	8	9	-1
US	NI	Nechako	VSJH	Diagnostic Imaging	General-purpose	GE	ogiq E	12/15/2015	2023	2023	8	1	7
US	NW	Terrace	MMH	Maternity	General-purpose	SonoSite Inc.	180	11/1/2007	2016	2020	8	9	-1
US	NI	Prince George	UHNBC	Operating Room	Portable	SonoSite Inc.	M-Turbo	3/19/2008	2017	2017	8	8	0

US	NW	Queen Charlotte	QCIH	Diagnostic Imaging	Portable	SonoSite Inc.	M-Turbo	3/20/2008	2017	2017	8	8	0
US	NW	Prince Rupert	PRRH	Diagnostic Imaging	General-purpose	Philips	iU22	3/23/2009	2017	2017	8	7	1
US	NW	Upper Skeena	WMH	Diagnostic Imaging	General-purpose	Philips	iU22	3/26/2009	2017	2017	8	7	1
US	NE	Peace River South	DCDH	Diagnostic Imaging	General-purpose	Philips	iU22	4/1/2009	2017	2017	8	7	1
US	NE	Peace River South	DCDH	Diagnostic Imaging	General-purpose	Philips	iU22	4/1/2009	2017	2017	8	7	1
US	NW	Smithers	BVDH	Diagnostic Imaging	General-purpose	Philips	iU22	4/21/2009	2018	2018	8	7	1
US	NI	Quesnel	GRB	Diagnostic Imaging	General-purpose	Philips	iU22	5/11/2009	2018	2018	8	7	1
US	NI	Quesnel	GRB	Diagnostic Imaging	General-purpose	Philips	iU22	5/11/2009	2018	2018	8	7	1
US	NI	Nechako	VSJH	Diagnostic Imaging	General-purpose	Philips	iU22	5/11/2009	2018	2018	8	7	1
US	NE	Peace River North	FSJH	Diagnostic Imaging	General-purpose	Philips	iU22	5/12/2009	2018	2018	8	7	1
US	NE	Peace River North	FSJH	Diagnostic Imaging	General-purpose	Philips	iU22	5/12/2009	2019	2019	8	7	1

US	NW	Smithers	BVDH	Emergency	Portable	SonoSite Inc.	M-Turbo	9/16/2009	2019	2019	8	7	1
US	NW	Terrace	MMH	Diagnostic Imaging	Echo	GE	Logic E9	1/1/2010	2019	2019	8	6	2
US	NE	Peace River South	DCDH	Diagnostic Imaging	General-purpose	Toshiba	Aplio XG	1/1/2011	2019	2019	8	5	3
US	NE	Peace River North	FSJH	Diagnostic Imaging	General-purpose	Toshiba	Aplio XG	1/1/2011	2020	2020	8	5	3
US	NI	Quesnel	GRB	Diagnostic Imaging	General-purpose	Toshiba	Aplio XG	1/1/2011	2020	2020	8	5	3
US	NW	Prince Rupert	PRRH	Diagnostic Imaging	General-purpose	Toshiba	Aplio XG	1/1/2011	2020	2020	8	5	3
US	NI	Prince George	UHNBC	Diagnostic Imaging	Interventional	GE	Venue 40	1/1/2011	2020	2020	8	5	3
US	NE	Fort Nelson	FNGH	Diagnostic Imaging	General Purpose	Toshiba	Aplio 500	1/2/2012	2021	2021	8	4	4
US	NW	Kitimat	KGH	Diagnostic Imaging	General	Toshiba	Aplio 500	1/1/2013	2021	2021	8	3	5
US	NI	Prince George	UHNBC	Diagnostic Imaging	Gen and Echo	Toshiba	Aplio 500	1/1/2014	2021	2021	8	2	6
US	NW	Kitimat	KGH	Radiology	General Purpose	Fuji	Titan	8/19/2013	2021	2021	8	5	5



US	NE	Peace River South	DCDH	Diagnostic Imaging	General-purpose	GE	Venue 40	6/6/2013	2021	2021	8	3	5
US	NI	Burns Lake	LDH	Emergency	General-purpose	GE	Logiq E9	1/21/2015	2023	2023	8	1	7
US	NW	Terrace	MMH	Radiology	Cardiac	GE	Vivid S6	11/29/2011	2019	2019	8	5	3
US	NW	Terrace	MMH	Radiology	General Purpose	Toshiba	Aplio 500	10/3/2013	2021	2021	8	3	5
US	NW	Terrace	MMH	Radiology	General Purpose	Toshiba	Aplio 500	10/3/2013	2021	2021	8	3	5
US	NE	Peace River North	FSJH	Diagnostic Imaging	General Purpose	GE	Venue 40	6/6/2013	2021	2021	8	3	5
US	NW	Queen Charlotte	NHGH	Radiology	General Purpose	Ultrasonix Medical Corp (001334)	Sonix Touch	3/21/2012	2020	2020	8	4	4
US	NI	Prince George	MBDH	Radiology	General Purpose	GE	Logiq E	8/21/2012	2020	2020	8	4	4
US	NI	Prince George	MKDH	Radiology	General Purpose	GE	Logiq E	5/16/2013	2021	2021	8	3	5
US	NI	Prince George	VLDT	Radiology	US	GE	Logiq E	12/22/2011	2019	2019	8	5	3
US	NW	Prince Rupert	PRRH	Radiology	US	Philips	iU22	12/17/2010	2018	2018	8	6	2

US	NI	Prince George	UHNB C	US	General Purpose	Philips	Epic 5	1/1/2014	2022	2022	8	2	6
US	NI	Prince George	UHNB C	US	General Purpose	Philips	Epic 5	1/1/2014	2022	2022	8	2	6
US	NI	Prince George	UHNB C	US	General Purpose	Philips	Epic 5	1/1/2014	2022	2022	8	2	6
US	NI	Prince George	UHNB C	Ultrasound	Cardiac	GE	E9	10/12/2010	2018	2018	8	6	2
US	NI	Prince George	UHNB C	Ultrasound	General Purpose	Toshiba	Aplio XG	3/22/2011	2019	2019	8	5	3

## **Appendix D: Ultrasound Services across Fraser Health**

### Ultrasound Services across Fraser Health

#### What is happening?

A severe shortage of qualified sonographers is impacting access to ultrasonography and echocardiography services across Fraser Health. Some hospital sites are experiencing such staffing shortages that only inpatient and emergency cases can be accommodated and outpatient referrals are being diverted to other facilities.

#### Who will be affected and how?

All Fraser Health sites are experiencing sonographer staffing challenges. At some sites the staffing shortages are resulting in ultrasound room closures. The most critical shortages are currently at:

- Abbotsford Regional Hospital
- Burnaby Hospital
- Chilliwack General Hospital
- Langley Memorial Hospital
- Mission Memorial Hospital
- Ridge Meadows Hospital
- Surrey Memorial Hospital and Jim Pattison Outpatient Care and Surgery Centre

Wait times for outpatient ultrasound services at these locations are beyond acceptable levels. Requests for outpatient ultrasonography and echocardiography exams may be diverted to other locations. Every effort is being made to accommodate inpatient and emergency cases at these sites.

#### What is being done?

Lower Mainland Medical Imaging, as part of the Provincial Imaging Council, is involved in ongoing discussions with government, educational institutions and other stakeholders to strategize long term solutions to the sonographer staffing challenges.

Mitigation steps to date include:

- Extensive local and national recruitment efforts for qualified sonographers.
- Implementation of a training opportunity for mammographers to perform breast ultrasound.
- Successful discussions with the Ministry of Health, Ministry of Advanced Education and BCIT regarding increased capacity in the sonographer training program. BCIT was approved by the Ministry of Advanced Education on July 19, 2016 for additional sonography and echocardiography seats. Effective 2017 there will be:
  - 2 additional seats in the 2 year clinical program
  - 8 additional seats in the fast track ultrasonography program
  - 8 additional seats in the fast track echocardiography program
- Medical Services Commission moratorium on approval of new ultrasound facilities.
- Smoothing of ultrasound wait lists across all lower mainland hospital sites as appropriate.

#### Who do I contact for more information?

Please contact your Medical Imaging site coordinator for inquiries related to the ultrasound service at your hospital site.



**Appendix E: Injuries among Cardiac Sonographers:  
Royal Jubilee Hospital survey results &  
recommendations for sonographer injury prevention at  
RJH and VGH (Health Sciences Association of BC,  
October 15, 2014)**

**Injuries among Cardiac Sonographers: Royal Jubilee Hospital survey results & recommendations for sonographer injury prevention at RJH and VGH**

**Health Sciences Association of BC**

**October 15, 2014**

**Background**

1. In recent months, there have been indications that injuries among cardiac sonographers are increasing. A call has been raised to do more in response. Reports and calls for action come from a variety of sources including HSA stewards, representatives on joint occupational health and safety committees and from worker representatives involved with joint Enhanced Disability Management programs (EDMP). These reports cover a range of sites, but reports related to the cardiac sonographers employed at the Royal Jubilee Hospital and Victoria General Hospital in Victoria are the most numerous.
2. It is widely acknowledged that sonographers in general are at risk for developing work-related musculoskeletal disorders such as inflammation of the tendons (tendonitis) or tendon sheaths (tenosynovitis), bursitis, muscle strains, and pathology of the nerves in the upper extremities, neck, and back.
3. According to a study conducted by the Society of Diagnostic Medical Sonography published in 2000 (and supported by numerous other studies), more than 80% of sonographers were scanning in pain and 20% of those eventually experienced a career-ending injury. On average, within 5 years of entering the profession, sonographers were experiencing pain while scanning. (Society of Diagnostic Medical Sonography. Sonography Benchmark Survey, Dallas, Texas; 2000).
4. In 2002 a survey of BC Sonographers – part of a joint project funded by the HSA and WorkSafeBC - found that 91% of sonographers had reported work related musculoskeletal injuries at some point. Medical literature suggested that 80% of sonographers were seeking medical treatment for MSIs, and many either missed work due to symptoms (17%), reduced their duties (15%) or used sick leave (21%) or vacation days (12%) to recover.
5. In 2011, supported by the HSA with technical input from “Sound Ergonomics” in Washington State, a series of one-page best practice sheets was developed by Judy Village & Associates. Those best practice sheets continue to be a valuable resource and may be accessed on-line through [WorkSafeBC](#).
6. The purpose of the project was to bring together best practices and known solutions, including changes to equipment and supports, work techniques, how work is scheduled and organized, and increased overall awareness in order to reduce injuries among sonographers.

### HSA's 2014 Survey

7. In response to reports of increased injuries in the RJH echo lab and in order to find out firsthand what cardiac sonographers at RJH and VGH were experiencing, the HSA conducted a brief survey of those workers in July, 2014 with follow up meetings with workers in August.
8. Of the 18 workers in the Cardiac Sonographer group, 13 responded to the on line survey. This is a summary of those responses:
  - *2/3 of survey respondents have been conducting scans for more than 9 years*
  - *respondents conduct 7 scheduled scans per day ranging from 45 to 60 minutes each*
  - *respondents conduct 1-2 portable scans per day ranging from 30 to 45 minutes each*
  - *44% indicated they have no break time between scans*
  - *56% estimated break time between scans at 1-5 minutes*
  - *100% had experienced pain while scanning – 75% of those within the previous week*
  - *the majority of respondents experience pain always or daily*
  - *2/3 of respondents had not reported an injury to the employer or WorkSafeBC*
  - *of the 1/3 who had reported injuries, 60% had done so within the previous week*
  - *85% sought medical treatment for work related pain*
  - *75% of respondents felt they had not received adequate ergonomic training*
  - *54% felt they had not been properly trained in how to do their job safely*
9. In addition to the above, most respondents identified a need to build better rest, recovery and exercise time into their schedules. However it was reported that due to the volume of scans required and the need to handle time consuming portable scans, there is not enough time available to engage in those injury prevention measures.
10. Survey results and follow up interviews with techs support a conclusion that little attention is paid to the “best practices and known solutions” described in the Judy Village/WorkSafeBC practice sheets. Some examples given of the gap between best practice and the current situation are as follows:
  - Work is scheduled and organized with little or no input from staff.
  - The number of scheduled scans performed in a day has not changed in 15 or more years, however due to significant advances in technology, much more sophisticated

Injuries among Cardiac Sonographers: Royal Jubilee Hospital survey results & recommendations for sonographer injury prevention at RJH and VGH

scans are conducted requiring more time for analysis and reports between scans therefore adding to the workload.

- The pace of work is such that techs do not have time to take breaks, but instead use break periods to catch up on backlogs.
  - New equipment has been introduced with little or no input from staff and without testing or adequate training.
  - Portable scans have been used inappropriately to fill in for missed appointments (no shows).
  - Workers often use personal time to recover from fatigue or injuries.
  - Techs often are not reporting injuries despite a demonstrated best practice of encouraging sonographers to report their pain and injury so that steps can be taken to prevent it from worsening.
  - Techs don't consider themselves to be adequately trained in the safe performance of their duties.
11. A combination of the factors listed above has created the current situation of high injury rates. A comprehensive response is required.
  12. There have been recent meetings between the HSA and employer representatives to discuss these ongoing concerns. On October 9, 2014, the Vancouver Island Health Authority's Director of Heart Health and Adult Intensive Care, Catherine Hodgins, put forward an "Injury Plan" for Echocardiography Techs.
  13. Proposals contained in Ms. Hodgins injury plan are worth further discussion, but the union is concerned they don't go far enough in addressing the broader range of concerns that have been raised.

### **Recommendations**

Following is a list of recommendations which may be expanded upon as required:

1. Establish a Sonographer Working Group made up of representatives of the employer and the union to jointly develop a detailed action plan with specific recommendations for the reduction of injuries among Cardiac Sonographers at Royal Jubilee and Victoria General Hospitals.

[Injuries among Cardiac Sonographers: Royal Jubilee Hospital survey results & recommendations for sonographer injury prevention at RJH and VGH](#)



2. The Working Group shall develop its own terms of reference and shall report monthly to the RJH and VGH JOHS committees.
3. The mandate of the Working Group should include, but not be limited to the following action items:
  - a. Consideration given to a reduction in the number of scheduled exams per sonographer, taking into account existing ergonomic conditions and equipment, the type of exams performed, experience of the sonographer, and the duration of the individual exams.
  - b. Establishing limits on the use of portable exams.
  - c. Developing a plan for regular ergonomic training.
  - d. Ensuring adequate space is available for staff, equipment and patients to enable safe delivery of services.
  - e. Providing sufficient breaks between patients.
  - f. Ensuring consultation with and training of staff prior to the introduction of new equipment.
  - g. Ensuring staff follow proper protocols for reporting pain and injury.
  - h. Recommending applicable practice changes, including those described in the HSA/Judy Village document:

[Best Practices for Diagnostic Medical Sonographers:  
Understanding and Minimizing Risk of Musculoskeletal Injury](#)

David Durning  
Senior Labour Relations Officer – OH&S  
Health Sciences Association of BC  
[ddurning@hsabc.org](mailto:ddurning@hsabc.org)

Injuries among Cardiac Sonographers: Royal Jubilee Hospital survey results & recommendations for sonographer injury prevention at RJH and VGH

Page 4 of 4

## **Appendix F: LOU #23 Between Alberta Health Services and Health Sciences Association of Alberta Re: Recruitment Bonus for New Sonographers**

**LETTER OF UNDERSTANDING #23**

**BETWEEN**

**ALBERTA HEALTH SERVICES**  
(hereinafter referred to as the Employer)

**- and -**

**HEALTH SCIENCES ASSOCIATION OF ALBERTA**  
(hereinafter referred to as the Union)

**RE: RECRUITMENT BONUS FOR NEW SONOGRAPHERS**

In consideration of the significant operational, recruitment and retention challenges in attracting Sonographers to the rural and suburban areas of the province, the following agreement is made between the Parties on a without prejudice and without precedent basis :

1. A recruitment bonus may be offered to a new graduate or non-Alberta Health Services Sonographer who agrees to be employed in a rural or suburban site where recruitment issues are impacting operations.
2. A recruitment bonus of five thousand dollars (\$5,000.00) for a one (1) year commitment and ten thousand dollars (\$10,000.00) for a two (2) year commitment to a permanent position with a full time equivalency (FTE) of zero point sixty (0.60) or greater.
3. A recruitment bonus of three thousand dollars (\$3,000.00) for a one (1) year commitment and six thousand dollars (\$6,000.00) for a two (2) year commitment to a permanent position with a full time equivalency (FTE) of zero point sixty (0.60).
4. Funds will be paid out in a lump sum of seventy-five percent (75%) upon hire and the remaining twenty-five percent (25%) at the end of term of the agreed to service.
5. Should the Employee terminate employment, or relocate to an urban center (within Edmonton or Calgary city limits), the Employee shall forfeit all rights to any remaining amount. The Employee shall also be required to repay the signing bonus prorated based on their length of service based either on a one-twelfth (1/12) or one twenty-fourth (1/24) ratio for each month of service, dependent upon length of commitment.
6. The payment of a recruitment bonus shall be based on operational need to ensure ongoing operations are addressed. When it is deemed that this Letter of Understanding is no longer required, the Employer shall advise the Union by providing eight (8) weeks notice.

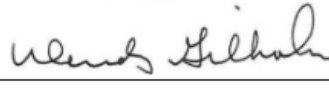
7. The Employer shall advise the Union which employees receive the signing bonus and also list their FTE, classification and location.
8. The Employer shall submit all Return of Service Agreements to the Union in a timely manner.

This Letter of Understanding will expire March 31, 2017, or upon the date of ratification of the next Collective Agreement, whichever is later.

ON BEHALF OF THE EMPLOYER



ON BEHALF OF THE HEALTH SCIENCES  
ASSOCIATION OF ALBERTA



DATE: June 11, 2015

DATE: June 11, 2015

## **Appendix G: Job Posting – Diagnostic Medical Sonographer**

## **Diagnostic Medical Sonographer - full-time and part-time - Regina, SK**



*Your future is here!*

*The Regina Qu'Appelle Health Region (RQHR) currently has full-time and part-time opportunities available for Diagnostic Medical Sonographers.*

The Regina Qu'Appelle Health Region is the largest health care delivery system in southern Saskatchewan and one of the most integrated health delivery agencies in the country. Regina Qu'Appelle Health Region provides tertiary care to residents of Saskatchewan in two provincial hospitals – the Regina General Hospital and the Pasqua Hospital.

Regina Qu'Appelle Health Region offers a full range of services to meet the needs of more than 260,000 residents living in cities, towns, villages, rural municipalities and First Nation communities within the Region.

RQHR Sonographers work as part of a team to perform a variety of exams including: Abdominal, Obs/gyn, small parts, vascular, pediatrics, interventional and neurosonography.

Incentives provided include:

- Starting wage \$41.25 per hour
- Max wage \$44.19 per hour (reached after three years)
- Relocation assistance \$2000
- New Grad Bursary \$5000
- Recruitment Incentive \$5000
- Compensation for credential certification exam costs
- Pension and Benefits

Qualifications for employment with RQHR include:

- Completion of an accredited Sonography program
- Credentialed membership with Sonography Canada is required.

**Interested applicants are invited to submit a resume in confidence to:**

**Employment Services**  
**Regina Qu'Appelle Health Region**  
2180 – 23rd Avenue  
Regina, SK S4S 0A5  
Fax: (306)766-5147  
Email: [jobs@rqhealth.ca](mailto:jobs@rqhealth.ca)  
[www.rqhealth.ca](http://www.rqhealth.ca)

### **Locations**

Canada Saskatchewan Regina

**Company Name:** Regina Qu'Appelle Health Region  
Active from 1/18/2016 to 5/18/2016

## **Appendix H: Fort McMurray Hiring**

# Medical Sonographers

Don't miss this career opportunity

In Northern Alberta

**\$75,000 Signing Bonus**

Living Allowance

Retention Compensation

Comprehensive Benefits Package

Available Immediately:

## **One Ultrasound position in Fort McMurray**

Looking to broaden your ultrasound experience? If you are currently registered and hold active insurance with Sonography Canada, have one or more years of experience in ultrasound, you are eligible for this terrific career opportunity. Don't miss it.

Fort McMurray offers a vibrant, young and growing community with great outdoor just waiting for you?

[www.fortmcmurraytourism.com](http://www.fortmcmurraytourism.com)

- State of the art Technology
- Continuing education
- Work-life balance with no on-call or weekend shifts
- Relocation assistance available
- Quarterly social activities
- Free parking
- Monthly northern living Allowance PLUS annual retention compensation structure

**CONTACT:** Roxanne Sweeney at (780)489-5313 ext. 3060, [Rsweeney@insightimaging.ca](mailto:Rsweeney@insightimaging.ca) or visit our website at [www.xray.ca](http://www.xray.ca) for more information. We respect your confidentiality and all inquiries are welcome.



## **Appendix I: Job Posting – Private Posting in Saskatchewan (June 2016)**

**From:** "Sonography Canada" <info@sonographycanada.ca>  
**Subject:** North Battleford Medical Imaging - Sonographer Employment Opportunity  
**Date:** June 20, 2016 at 5:57:00 AM PDT



### **New Private Practice located in North Battleford, SK**

Full service private outpatient practice located in North Battleford Saskatchewan in a new state-of-the art facility.

#### **Requirements for interested applicants:**

- Graduate from a recognized Canadian Institution
- Active CRGS credentialed member of Sonography Canada (formerly CSDMS/CARDUP) required
- MSK, cardiac and vascular experience an asset
- All experience levels, including new graduates, are encouraged to apply

#### **Incentives:**

- Signing/relocation bonus available
- Excellent benefits
- Commission based compensation available
- All new equipment

**Wage Range: \$50-\$60/hour, based on years of experience**  
**Hours negotiable, part OR full-time, commencing summer/fall of 2016**

If interested, please forward a copy of a current resume to Morgan Hannon at  
[morgan@lloydmedimaging.com](mailto:morgan@lloydmedimaging.com)

We look forward to having you join our fun, vibrant team!

[Unsubscribe/Désabonner](#)

Sonography Canada / échographie Canada

P.O. Box 1220, Kemptonville, ON K0G 1J0 1-888-273-6746 [www.sonographycanada.ca](http://www.sonographycanada.ca)

## **Appendix J: Journal Article – Work-related musculoskeletal disorders in sonographers: a review of causes and types of injury and best practices for reducing injury risk**

# Work-related musculoskeletal disorders in sonographers: a review of causes and types of injury and best practices for reducing injury risk

Carolyn T Coffin

Department of Diagnostic Ultrasound,  
Seattle University, Seattle, WA, USA

**Abstract:** Work-related musculoskeletal disorders in sonography professionals have a reported incidence of 90%. These disorders are defined as conditions that are either caused by or aggravated by tasks performed in the workplace. These injuries have a financial and emotional impact on the worker and affect workplace productivity and quality patient care. The causes for these injuries are multifactorial and therefore require a variety of solutions for mitigating injury risk. Sonographer work postures, work schedules, task rotation, administrative support, and ergonomic workplace equipment all enter into the formula for reducing the incidence of these disorders.

**Keywords:** work-related musculoskeletal disorders, WRMSD, best practices, workstation, bedside studies, ergonomics, sonography

## Introduction

Many professions have documented work-related musculoskeletal disorders (WRMSDs) for a number of years, and those industries have attempted to address injury risks. These injuries are defined as conditions that are caused by or aggravated by workplace activities, and they account for up to 60% of all workplace illnesses.<sup>1</sup> They are known by different names, such as repetitive strain injury, repetitive motion injury, and cumulative trauma disorder.

Injury among sonographers was first reported in 1985 when Craig<sup>2</sup> identified “sonographer’s shoulder.” WRMSDs were first identified in cardiac sonographers in 1993 and were more extensively reported in surveys conducted in 1995 and 2008.<sup>3-6</sup> There are multiple causative factors for these injuries; therefore, preventing them requires various strategies.

## Incidence of injury

The incidence of musculoskeletal injury among North American sonographers in 1997 was 84% and had increased to 90% in 2008.<sup>4,5</sup> This latter result may be due to an increased awareness among sonographers as to the reason for their fatigue and pain during the workday and to a willingness to report their symptoms.

## Causes for injury

The causes and contributory factors of these injuries in sonographers are numerous, but they can generally be grouped into three categories.

1. Biomechanical/environmental factors: these include the workstation, the exam room equipment, the ultrasound system, and the exam room layout. In an effort to

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increase throughput and standardize exams, ultrasound systems have added protocol management software that can potentially reduce exam time and increase the number of exams done by each sonographer.

2. Administrative factors: these relate to scheduling of patient exams and sonographer rotation schedules. Work conditions have changed. Employees may have to work beyond their regularly scheduled hours due to staffing shortages or busier patient schedules, which leads to reduced muscle recovery time. Rapid technological changes have resulted in redefining the nature of many jobs.<sup>7</sup> Staffing shortages and decreased reimbursements have contributed to increased patient volumes. In addition, there is a trend toward performing ultrasound exams ordered on inpatients at their bedside rather than transporting the patients to the ultrasound department. Bedside exams present many ergonomic challenges that are difficult to address.
3. Worker practices: these are the postures sonographers use when scanning or working at a computer workstation. In addition, job satisfaction can play a role in these injuries. Pressures and stress in the workplace have been identified as potentially affecting worker health.<sup>7</sup> Automated work practices often leave employees with the feeling that they have little control over their workload.<sup>7</sup> Although job satisfaction has been more strongly correlated with psychosocial problems than with physical illness, there is some correlation between job satisfaction and musculoskeletal disorders.

Other contributory factors are the aging workforce and increasing obesity rates.<sup>8</sup> The average age of sonographers in the 2008 survey was 45 years.<sup>8</sup> The impact of age is related to muscle force.<sup>9</sup> By age 45, both males and females are approximately 10 years beyond their peak muscle strength, as maximum muscle strength is reached in the second and third decades.<sup>9</sup> Obese patients require the sonographers to exert more force during the ultrasound exam and may require an extended reach and/or excessive arm abduction to access both sides of the patient. Obesity also puts workers at risk for health conditions that can make them more susceptible to WRMSDs.

### High-risk work activities

According to the Occupational Safety and Health Administration, the work activities that can lead to WRMSDs are repetitive motions, forceful or awkward movements, duration of pressure, overuse, poor posture or improper positioning, excessive force and strain, and vibrations.<sup>10</sup>

All but vibrations are work activities engaged in by sonographers.

Repetitive motions occur when sonographers perform the same type of exam throughout the workday. This is more prevalent among sonographers performing high-risk obstetrical ultrasound exams and cardiac sonographers. The lack of variety in these exams forces the sonographers to use the same muscle activities all day without enough recovery time. The duration of pressure is related to the amount of time that the sonographers are actually scanning, or "transducer time." This is also related to the amount of transducer pressure being exerted by the worker while scanning. Poor posture and improper positioning of extremities include wrist flexion and extension, neck twisting or extension, trunk twisting and flexion, reaching, and arm abduction (Figures 1–5). Static work postures reduce blood flow to the joints, which then increases the load on the muscles and decreases the time for fatigue to occur.

### Injury symptoms and the impact of injury

WRMSD symptoms include inflammation and swelling, numbness, muscle spasm, burning and/or tingling, and loss of sensation. Some of these symptoms may cause a loss of muscle strength, making it difficult to hold a transducer.<sup>4–6,11</sup> Eye strain, although not a symptom of WRMSD itself, can lead to blurred vision and poor posture. As this is a cumulative disorder, seemingly minor symptoms can progress over time to more serious, even debilitating, symptoms.

Many of the challenges facing imaging departments center around a stable, experienced workforce, which means that worker injury can have a large impact on the



Figure 1 Wrist flexion and "pinch" grip.



Figure 2 Trunk and neck twist.



Figure 4 Arm abduction.

department's bottom line, worker morale, and the quality of patient care. There is also a financial and emotional impact on the individual worker who becomes injured. Increasing an ultrasound department's work flow and/or staffing reductions could potentially result in each sonographer performing more exams each day. This increased volume could lead to injuries if the individual worker is unaware of how to optimize the workstation and how to make changes in his/her work postures.

### Types of injury

Sonographers are at risk for the following injuries.

- The shoulder is the most common body part injured in sonographers, and the injuries include bursitis, tendonitis, and rotator cuff tears.<sup>4,5</sup> The rotator cuff muscles and their tendons are poorly perfused normally, and any work activities that further compromise blood flow

to the shoulder can decrease the inflow of oxygen and nutrients and the removal of wastes. This, in turn, can increase the risk for rotator cuff injury. As a person ages, he/she is at higher risk for rotator cuff injury simply as a factor of aging. Thus, as the workforce continues to age, this injury may become more prevalent in occupations that require prolonged arm abduction and static arm postures.

- Inflammation of the tendons (tendonitis) and/or tendon sheath (tenosynovitis) of the hand and wrist are also common among sonographers.<sup>11</sup> Gripping the ultrasound transducer contributes to this injury and can lead to "trigger finger," which occurs when the tendon sheath becomes edematous and traps the finger tendon in a locked position.<sup>4,6,12-14</sup> Another form of tendonitis is De Quervain syndrome, which occurs at the base of the thumb and is also associated with gripping the ultrasound transducer



Figure 3 Trunk flexion.



Figure 5 Excessive reaching.



and/or pressure on the base of the thumb against the transducer casing.<sup>12</sup>

- Nerve entrapment syndromes, such as carpal tunnel syndrome, cubital syndrome, and, to a lesser extent, thoracic outlet syndrome occur in sonographers and affect not only muscles and tendons but also nerves and the circulation to the arm and hand. It has been demonstrated that carpal tunnel syndrome results from activities that involve flexion and extension of the hand, which increases pressure on the median nerve in the wrist.<sup>14</sup> In sonography, wrist flexion and extension results from gripping and manipulating the ultrasound transducer during a variety of exams. Cubital tunnel syndrome can result from repeated flexion and extension of the elbow or from mechanical pressure against the ulnar nerve when a sonographer rests his/her elbow on the exam table while scanning.<sup>13</sup>

### Muscle physiology

An understanding of basic muscle physiology and the importance of optimal body mechanics and neutral work postures will help sonographers identify and reduce the risk factors associated with their profession. There are two types of muscle activity: dynamic and static. When performing dynamic work, the contraction and relaxation activity of the muscles flushes them with oxygen-rich blood and allows for the removal of waste products. Static work postures, on the other hand, prevent the muscles from receiving fresh blood and lead to a buildup of waste products. Muscles must rely on their own reserves, and they eventually become fatigued.<sup>17</sup> The onset of muscular fatigue from static effort will be more rapid with the exertion of greater force. Research has shown that work can be maintained for several hours per day without symptoms of fatigue if the force exerted does not exceed approximately 10% of the maximum force of the muscle involved.<sup>18–20</sup> When the frequency and duration of loading exceeds the ability of the muscles and tendons to adapt, inflammation occurs, followed by degeneration, microtears, and scar formation.<sup>15,18</sup> Muscles and tendons are designed to stretch and to be used regularly; therefore, an important injury prevention strategy is movement.

### High-risk work postures

A common static work posture among sonographers is abduction of either the scanning arm or the nonscanning arm. An angle of abduction greater than 30° puts the shoulder at risk for injury, especially if the arm is abducted for long periods of time.<sup>17,21</sup> Sonographers often scan with excessive arm abduction because they do not take the time to optimize their position in

respect of the patient and the ultrasound system. Over-reaching is another common injury-producing work posture. Reaching with either arm beyond 30 cm for a prolonged period of time can result in muscle fatigue and possible injury.<sup>17</sup> Reach and abduction are both exam specific and depend on a patient's body habitus and on the adjustability of exam room equipment. However, clinical site work evaluations have demonstrated that the amount of reach for a sonographer to scan the left side of a patient's abdomen or the left lower extremity can be as much as 63 cm. For cardiac sonographers who scan from the right side and reach over the patient, the amount of reach can exceed 71 cm. Right-handed cardiac sonographers also typically have too much arm abduction and too much wrist flexion and trunk bending, as they are reaching over the patient to access the cardiac apex for a majority of the exam (Figure 6).

Forward reach to the ultrasound control panel varies depending on which controls are being accessed and the design and depth of the ultrasound system's control panel. Full arm extension may be required to reach the most distant controls; however, this is a high-risk posture only if the sonographer maintains this reach for an extended period of time. Typically, sonographers reach for controls and then relax the nonscanning arm. When they rest their nonscanning arm on the ultrasound system at a distance in excess of 30 cm, the risk for injury increases.

Injury-producing work postures are especially common when performing venous reflux exams. Typically, these are performed with the patient standing, either on the floor or on a step stool, which forces the sonographers to sit or kneel on the floor (Figure 7). The resultant work postures are excessive reach, particularly with the nonscanning arm, excessive neck extension, and trunk twist.



**Figure 6** Right-handed cardiac sonographer demonstrating too much arm abduction, reach, trunk bending, and neck flexion.



**Figure 7** Kneeling on the floor to perform venous reflux study.

In addition to abduction and over-reaching, performing exams with the scanning arm behind the shoulder (Figure 8), reaching across the front of the body to access the control panel, and scanning with the arm unsupported can all put strain on the shoulder joint.

Transducer designs can often force the use of a "pinch" grip rather than a whole-hand or palmar grip. As ultrasound manufacturers cannot produce a transducer for each individual user, sonographers must learn to hold the transducer in a more comfortable grip. A pinch grip uses the smallest



**Figure 8** Scanning with arm behind the shoulder.

muscles of the body and requires up to five times more muscle and tendon force than a palmar grip.<sup>22</sup> Therefore, sonographers should try different ways of holding the transducer that use more of the hand-grips similar to those used to hold golf clubs or baseball bats. The three-dimensional/four-dimensional transducers are wider and heavier than two-dimensional transducers, contributing to the discomfort of gripping them. Manufacturers have varied the design of transducers, including a fingertip transducer and a prototype of a wireless transducer. However, these are not widely available for all ultrasound systems, nor are they appropriate for all types of exams and procedures. In addition, wireless transducers may add extra weight to the sonographer's hand and wrist, as those transducers have to accommodate a battery pack. Attempts have been made to design a "sleeve" that can slide over the narrow transducers to make them more comfortable. However, these are generally just one size, can be awkward, and may be easily lost in the department.

### Best practices for mitigating sonographer occupational injury

As these injuries have multiple causative factors, reducing or eliminating injury risk hazards can be done in multiple ways. Preventive measures can range from simple work posture changes that conform to the department's existing equipment to upgrading the department with state-of-the-art ultrasound systems, exam tables, and chairs. However, all the best equipment is only as good as the willingness of the user to optimize the features of that equipment and to make work posture changes. Therefore, it is a combination of factors that has a positive impact on reducing injury risk hazards.

Sonographers should sit or stand so that they can move down the length of the exam table when necessary to prevent reaching back while scanning. They should also position themselves in front of the most frequently used keys on the ultrasound control panel to avoid reaching across their bodies. Strain on the shoulder can be reduced by using an arm support device while scanning.

Both arm abduction and over-reaching can be reduced by lowering the exam table and/or raising the chair, by having the patient move close to the sonographer, and by positioning the ultrasound system's control panel close to the sonographer (Figure 9). A qualitative study looked at the reduction in muscle firing when the scanning arm was supported. This was evaluated using surface electromyography (SEMG) that provided audible feedback. Muscle firing, as determined by the beeping of the SEMG unit, was significantly reduced when using the arm support device seen in Figure 10.<sup>23</sup> Another study using





Figure 9 Left-handed cardiac exam; chair is too low or table is too high.

SEMG to measure muscle firing used by sonographers in the "typical" scanning posture demonstrated a 46% reduction in muscle firing when the angle of abduction was reduced from 75° to 30°. When the reduced angle of abduction was supplemented with support cushions for the scanning arm, there was an 88% reduction in muscle firing (Figure 11). In addition,



Figure 10 Mobile arm support device.



Figure 11 Arm support cushion.

tion, the study demonstrated a 64% reduction in firing of the left trapezius muscle when the reach to the control panel was reduced to 30 cm.<sup>24</sup>

When scanning the left side of a patient's abdomen, the sonographer should have the patient roll up on his or her side and move to the edge of the exam table toward the sonographer. When performing endovaginal exams, the sonographers should use exam tables with stirrups, if available, and scan from the foot of the table (Figure 12). If the table does not have stirrups, sonographers can still have the patient move to the end of the exam table and place her heels on each corner of the table. This will enable the sonographers to scan from the end of the table.

When scanning the patient's neck for either carotid artery exams or thyroid exams, the sonographer should scan from the head of the table, facing the patient's feet (Figure 13). However, if sonographers find this position too challenging, they should sit or stand level with the patient's shoulder, and when scanning the left side have the patient lie at an angle with his/her head as close to the sonographer as possible. They should also try having the patient sit for these exams and then stand behind him/her (Figure 14). This allows the



Figure 12 Endovaginal exam performed on table with stirrups.



Figure 13 Carotid exam performed from the head of the table.

sonographer to be close to the patient and to position the ultrasound system close; it also gives the sonographer the opportunity to rest his or her forearm on the patient's shoulder.

To reduce abduction and reach when performing bilateral or left lower extremity venous exams, the sonographer should have the patient turn around on the exam table and lie with his/her left leg closest to the sonographer (Figure 15). This will, of course, not be possible with patients who have limited mobility, but the goal is to make work posture changes as often as possible so that awkward and/or static work postures are used only when there is no alternative. Another option for lower extremity exams is to have the patient sit with his/her legs dangling over the edge of the exam table close to the sonographer (Figures 16 and 17). In addition, sonographers should have cooperative patients perform self-augmentation during lower extremity venous exams. By instructing the patient to flex his/her foot toward the knee and then release the flex, the sonographers can eliminate the need to reach to compress the patient's calf (Figure 18). This also eliminates neck and trunk twist.



Figure 15 Bilateral lower extremity exam with patient repositioned for left leg.

Ideally, this exam should be performed on an exam table that has a steep angle of reverse Trendelenburg and is raised up enough to allow the sonographers to sit on a chair or stool close to the patient. The ultrasound system's control panel should also have a wide height range so that it can be adjusted low enough to prevent the need to reach up to the controls.

Venous reflux studies can be more comfortably performed by the sonographer with the patient lying on an exam table that achieves an angle of reverse Trendelenburg of at least 40°. The sonographer should then position himself/herself at the foot of the exam table, sitting or standing at a height that reduces arm abduction and reach (Figure 19). In addition, an ultrasound system with a height-adjustable control panel that can achieve a minimum height of 24 inches reduces the need to reach up to access the controls and reduces neck extension when viewing the monitor (Figures 20 and 21).

The suggested work position for cardiac ultrasound exams is to scan left-handed on the left side of the patient. However, for those sonographers who prefer to scan right-handed, they



Figure 14 Carotid or thyroid exam performed with patient seated and scanning arm supported.



Figure 16 Scanning the lower extremity with patient seated on the exam table.



Figure 17 Scanning the lower extremity with patient seated on the exam table.

should try to perform the exam from the left side of the patient but facing the foot end of the exam table (Figure 22). This requires that the ultrasound system be moved from the head of the table to the foot; this can be difficult to achieve if the exam room is not large enough to allow for repositioning of the equipment.

Making changes in established work postures is often difficult and takes some practice but is worth the effort it takes. Implementing small changes over time is often easier. Not all exams can be performed every time with optimal work postures. However, the more often that sonographers can use neutral work postures throughout their workday, the lower their risk for WRMSDs.

### Environmental changes

Although changes in work practices are pivotal in addressing injury risk, administrative support and biomechanical/environmental changes are also important components. Department managers should establish a work environment in which sonographers feel comfortable reporting injuries



Figure 18 Patient performing self-augmentation.



Figure 19 Seated venous reflux exam.

and addressing risk hazards. Managers should be receptive to changing work schedules so that sonographers rotate through a variety of exams and are not repeatedly exposed to high-risk exams without some muscle recovery time. Patient exams should be scheduled with enough time for sonographers to optimize the exam room set up for each exam.

The desire to provide patients with a positive experience should be balanced with the need to provide quality



Figure 20 Standing venous reflux exam with adjustable control panel.





Figure 21 Adjustable control panel at the minimum height.

diagnostic exams while still maintaining a level of worker comfort. This is of particular concern with inpatients and bedside exams. In an effort to prevent patients from having to travel to the ultrasound department or to accommodate the nurses' schedules, many ultrasound exams are needlessly performed at the bedside. These can be among the most injury-producing exams for sonographers, as it is not easy to optimize equipment placement in the patient's room or to move the patient into an accessible position. This results in sonographers having to bend and/or twist to reach the patient throughout the exam. Although these exams should be reserved only for those patients whose health would be compromised if they were to be transported to the ultrasound department, the growing trend of providing all

patient services at the bedside has created the need to find innovative ways for sonographers to work in more neutral and comfortable positions during these exams.

Managers should support the inclusion of ergonomic features when purchasing new equipment, and if a significant number of bedside exams are performed, the department should have a lightweight, easily movable ultrasound system for those exams. Also, sonographers should have access to ergonomic seating on each patient floor.

Implementing an ergonomics compliance program is one way to demonstrate support for reducing injury risks and to obtain input and feedback from all the workers. Often, this is easier to develop and implement after consulting with an industry-specific ergonomics consultant who can perform a worksite evaluation and develop guidelines that address the needs of each department.

Correct scanning postures are more easily and more consistently achieved when the workstation equipment has multiple ergonomic features. All workstation equipment must be adjustable in order to address the physical dimensions and work style of each sonographer in the department. The ultrasound system should have a monitor that is mounted on an articulated arm so that it can be raised and lowered and so that it can be moved into multiple viewing positions. The control panel should have a wide height range so that sonographers can perform exams seated or standing. The most frequently used controls should be clustered together, and sonographers should position themselves in front of those controls. The system should be easily movable so that it can be positioned close to the exam table (Figures 23 and 24).

The exam table should be height adjustable, ideally by electric controls rather than manual. It should go low enough to accommodate wheelchair transfers and to perform lower extremity exams and high enough to allow sonographers of various heights to stand during exams. Other features can be added to the exam table to enhance its ergonomics. Some of those features might include a dropping foot board and stirrups for pelvic ultrasound exams, a right-side back access panel that allows the sonographer to roll the patient on to his/her left side and step in closer to the patient, a removable left panel that is used to access the apex of the heart during cardiac exams, a detachable headrest for access to the patient's neck, and a detachable arm board for upper extremity exams. And, finally, the exam room chair should have an adequate height range to accommodate the position of the table throughout each exam. The chair should have a seat pan that promotes the natural curvature of the spine and should be easy to adjust from a seated position. All exam



Figure 22 Performing right-handed cardiac exam from the left side of the exam table.



Figure 23 Correct scanning posture.

room equipment should be quick and easy to adjust; otherwise, sonographers will not take the time to optimize the features of the equipment.

The ultrasound work environment also includes the image archiving computer workstation and the reporting computer workstation. Computer desks should be height adjustable and desk chairs should have lumbar support, height adjustability, and features different from those of



Figure 25 Monitor is occupying desktop space and is positioned off-center to viewer.

exam room chairs. The computer monitors should be wall mounted on articulated arms for multiple viewing positions and to free up desk space. They should also be positioned directly in front of the user (Figure 25). Computer towers should not be positioned under the desks so that they interfere with worker leg positioning (Figure 26). The keyboard and mouse should be positioned so that excessive reaching is unnecessary (Figures 27 and 28). Shelves and other storage areas should be located so that reaching is minimized.

## Summary

The following is a summary of the best practices for reducing the risk for WRMSDs in sonography.

- Position the patient close to the sonographer.
- Try to perform some exams from the head or foot of the exam table; try some exams with the patient seated.
- Use a palmar transducer grip whenever possible.



Figure 24 Correct scanning posture.



Figure 26 Computer tower is obstructing leg position and access to the desk.



Figure 27 Reaching for mouse.

- Try different transducer grips throughout exams in order to maintain a neutral wrist position.
- Utilize the ergonomic features of the exam room equipment in order to reduce arm abduction, reaching, and neck and trunk twisting.
- Have cooperative patients self-augment venous flow during lower extremity exams.
- Utilize breaks for muscle recovery.
- Optimize the computer workstation equipment for more comfortable positions.
- Avoid unnecessary bedside exams.
- Avoid performing the same type of exam repeatedly throughout the workday.
- Consider the ergonomic features when purchasing new equipment.
- Above all, avoid static postures. It is important to incorporate movement into work activities.



Figure 28 Reaching for keyboard.

## Conclusion

WRMSDs among sonographers can impact the quality of patient care, can have a financial impact on both the ultrasound department and the individual worker, and can negatively affect the morale of the workplace. The multiple causes of these injuries require multiple approaches to their prevention. At the center of any injury prevention program, however, is the participation of the worker. Sonographers must recognize injury risk hazards, utilize the ergonomic features of their workstation equipment, and be willing to make changes in their work postures. The administrative environment of the sonography workplace must support these attempts to change and to report injuries. Without this synergy, it is difficult to effectively reduce the incidence of workplace injuries.

## Disclosure

The author declares no conflicts of interest in this work.

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## **Appendix K: HSPBA Addendum Re: Preferred Option for Size of Market Adjustment; Moratoriums Concerning Private Clinics**



## **HSPBA ADDENDUM RE: PREFERRED OPTION FOR SIZE OF MARKET ADJUSTMENT; MORATORIUMS CONCERNING PRIVATE CLINICS**

The HSPBA supports the findings and recommendations of the joint Recruitment and Retention Committee, but is providing this addendum in order to:

- 1) identify options for the size of the recommended market adjustment for Sonographers, as is required by the parties' Memorandum of Understanding (Appendix A); and
- 2) provide further recommendations to improve the Health Authorities' ability to compete with private ultrasound clinics for Sonographers.

### **Market adjustment**

The HSPBA agrees with the Committee's conclusion that the Sonographer shortage experienced by Health Authorities is dire, is primarily a wage issue, and requires a market adjustment.

Section 5 of the MOU establishing the Committee states that a proposal to MOH and PSEC requesting a market adjustment must, among other things:

- Identify options for the size of the market adjustments...

Based on the data provided in the Committee's report comparing Sonographer wages in the public and private sectors in B.C., Alberta and Saskatchewan, the HSPBA recommends the following options for the size of the market adjustment required to allow B.C. Health Authorities to realistically compete for Sonographers:

- To compete with only B.C.'s private sector, a market adjustment of 21.6% to 35.8% is required;
- To compete with the public sectors in Alberta and Saskatchewan, as well as with BC's private sector, a market adjustment of 32.2% to 41.5% is required; and
- To compete with the private sector in Alberta and Saskatchewan, as well as with their public sectors and BC's private sector, a market adjustment of 45.7% to 68.3% is required.

### **Competition with private clinics: moratorium on new and expanded private licenses**

B.C.'s Medical Services Commission currently has a moratorium until June 1, 2017 on approving **new** private ultrasound licences, but as of April 27, 2016 is again accepting applications to **expand current** private ultrasound licences.

Private clinics in B.C. are a major competitor for Sonographers who would otherwise work for B.C.'s Health Authorities. Expanding the number or size of private ultrasound licences will increase the number of Sonographers who work in private clinics instead of for the Health Authorities.

The HSPBA therefore recommends that the previous moratorium on expanding current private ultrasound licences be reinstated, and that this reinstated moratorium, as well as the current moratorium on approving new private ultrasound licences, continue at least until the shortage of Sonographers in the Health Authorities has been eliminated.

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