



CSCP Survey Results
A Snapshot of Perfusion in Canada 2023



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The Canadian Society of Clinical Perfusion (CSCP) conducted two national surveys in early 2023 to capture an updated snapshot of the working lives of perfusionists in Canada. Our goal as an association is to better understand demographics, portability, working environments, and what issues are most important to our members in their professional lives going forward. Two surveys were distributed; one was directed at the entire membership focusing on their demographics and various aspects of their working lives. The second survey was distributed to department leads to understand some human resource and clinical practice aspects of our profession currently. Where possible the results were broken down by selected provinces/regions to offer a secondary level of granulation and insight.

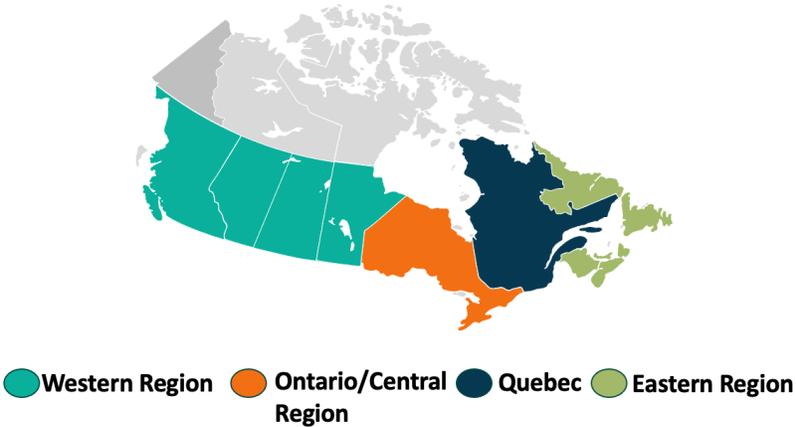


Figure 1 – Regional Breakdown of Canadian Clinical Perfusion Departments

Response Rate

The response to the individual members survey generated a reasonable response with 156 respondents out of 362 possible responses, giving a response rate of 43%. These responses were composed of 98% clinical certified CSCP members and 2% associate members, which is concurrent with the actual breakdown of the membership. The clinical team leaders survey generated 24 submissions of the possible 34 opinions sought from clinical leaders representing cardiac surgical departments across Canada offering a 70.5% response rate.

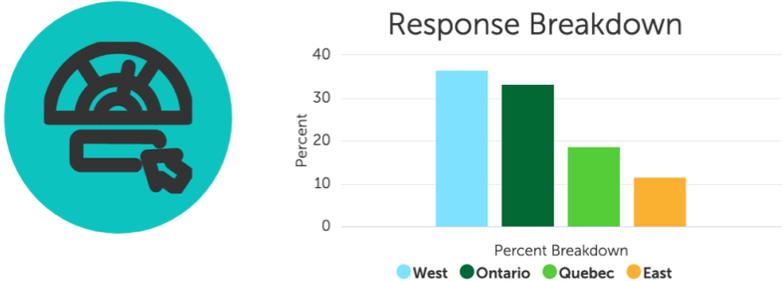


Figure 2 – Individual Members Response Rate Breakdown by Region

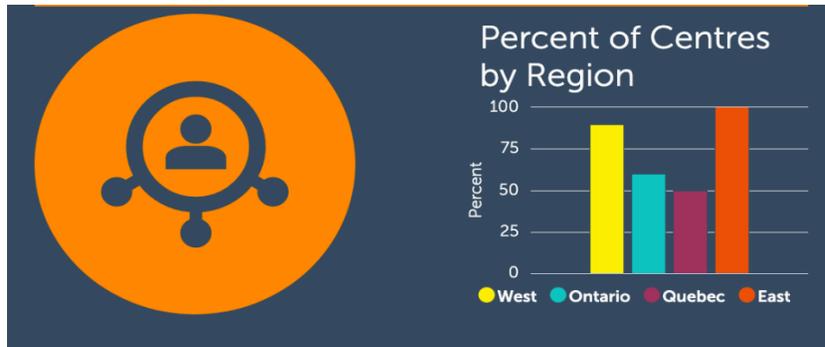


Figure 3 – Clinical perfusion leaders survey response rate breakdown by region.

Demographics

Understanding the general demographics of working perfusionists in Canada was acquired through general questions to reflect age ranges, years of practice, gender breakdown and the rates of visible minorities represented in the workforce. It was noted that the largest age group was the 31-40 year old category representing 32%, with consideration that when grouped together, 34% of the working population are greater than 50 years of age. As well, 35.7% have more than 20 years of experience, with the average being 10 years and a significant contingent (21.7%) having less than 5 years of practice.

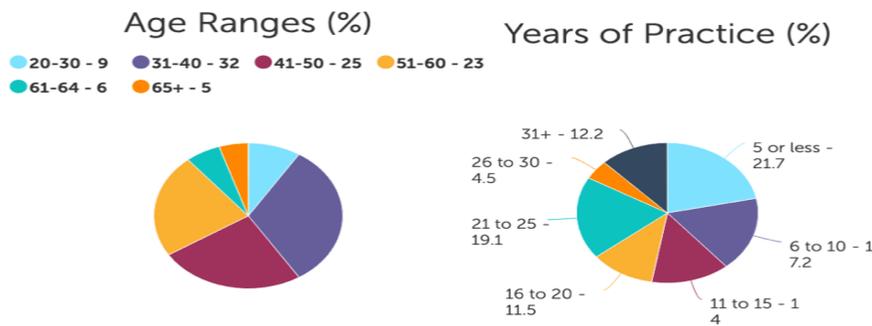


Figure 4 – Age ranges and years of practice of workforce.

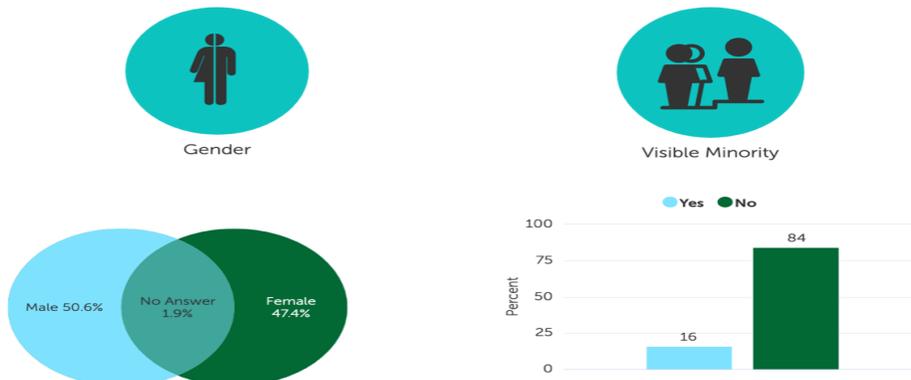


Figure 5 – Gender and Visible Minority Status of the current perfusion workforce.

Understanding the education level of working perfusionists helped to generate a baseline as there has been a recent change in the diploma level for new graduates with one of our three educational partners, with a Masters diploma being granted in the current cohort convocating in the spring of 2024. Looking at the current responses, the majority of the workforce holds a level of a bachelor’s degree with an advanced diploma (76%), with 21% currently holding a masters degree. With the anticipated increase in the number of perfusionists with a Masters level of education, considerations should be made for the benefits and challenges the profession may encounter over the next number of years. The anticipated ability for continued post-graduation interest in research and literature production may push the profession forward with continued collaboration with our professional partners. As well, with the opportunities that lie for working professionals with graduate degrees, challenges might be seen with an increased level of professional opportunities beyond clinical perfusion work. As such, we may see a shift of some of the workforce transitioning to other roles in healthcare including administration, industry work, or other opportunities over time.

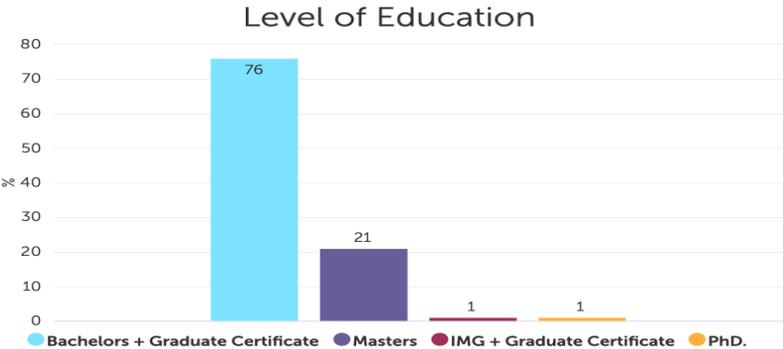


Figure 6 – Level of Education Attained by workforce.

Understanding as to how many working perfusionists hold certification to work in jurisdictions outside of Canada was a considered question. This idea lends to the potential portability of the workforce and the impact they may have globally if given the opportunity. Reciprocity with the American Board of Cardiovascular Perfusion (ABCP) is something that only graduates of accredited Canadian perfusion programs are allowed, as no other international programs have been deemed eligible to meet the benchmark and write the certification exam in the USA. Greater than half (55%) of CSCP members hold this certification, along with a minor handful holding certification in other jurisdictions including the Australian and New Zealand College of Perfusionists (ANZCP) and the Society of Clinical Perfusion Scientists (SCPS) in Great Britain. This has created a challenge with a significant migration of some Canadian perfusionists over the last number of years, with roughly half (14 of 28FTE’s) of the accounted vacancies at the time of the survey being the result of this factor. Beyond that, respondents were asked about locum work to understand desire of CSCP members to travel for both paid and volunteer work. Responses are outlined in Figure 7. Roughly a third (32.7%) have done locum work in Canada,

which at this time is a necessary need due to staff shortages and surgical need. Canadian perfusionists have had a significant impact globally with a number of professionals having done mission work, and having volunteered in over 35 countries.



Locum & Mission

- Locum Work in Canada - 32.7%
- Locum Work Abroad - 9.6%
- Mission Work - 21.2%

Figure 7 – Locum and Mission Work.

Vacancy Rates

There has been considerable commentary on vacancy rates of perfusionists in cardiac centers in Canada. Many departments have been maintained with vacancies for months to years due to retirements and movement nationally & to the USA, due to high recruitment and incentivization. Eight centers responded with losses to the USA, notably with 5 of those in the western regions of the country. Respondents to the clinical leader’s survey were asked questions regarding current vacancies, predicted vacancies for the next 1, 2, and five years (not additive). The results are listed in figure 8. The results are representative of a possible extrapolation to 135 vacancies within 5 years based on the response rate.



Figure 8 – Vacancy Rates – Clinical Leaders Survey.

Concurrently the general members survey indicated a self-declared retirement rates of 13% in 1 to 2 years, and another 24% following that within 5 years. Given the current CSCP membership population, extrapolation is quite consistent with the leadership responses at a potential 133 losses in the next 5 years. Beyond this, members were asked to identify if they were retired and have returned to work, with a national response of 9.6% in that position. Ontario specifically held the highest number with 17.3% of respondents from that province in the retired and working category. Of those that are working beyond retirement, 66.7% are working casual, 20.0% part-time, and 13.3% are working full-time hours.

Position Motivation and Conditions

The general membership was asked to rank seven motivating factors to maintaining their positions. These responses based on importance level are outlined in figure 9. The overall primary driver for the majority of perfusionists was base salary. It was noted that a more even distribution was seen when broken out by age, specifically looking at the 21-30 year old grouping with total year-end earnings at 36%, base salary 29%, and number of hours worked past 4pm and on weekends 29%. Notably, Ontario perfusionists had the highest rate of members indicating base salary being the most important at 58%, and Quebec perfusionists having the highest percentage rating for the number of hours on call at 21%.

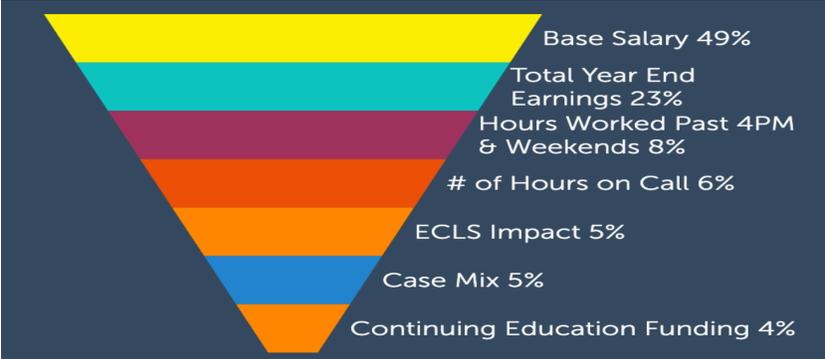


Figure 9 – Motivating Factors in Employment Benefits for Perfusionists.

Clinical leaders were asked to outline the number of call hours their departments cover per month while taking into account the number of team members they have on call at any given time and the length of hours they are required to be available. This information was extrapolated and cross referenced with the number of FTE’s each department has as well as the actual number of perfusionists working taking into account vacancies listed at the time of reporting. Results are outlined in figure 10.

	Hours/Month/Dept	Hours/FTE/Year	Hours/FTE/Year w/Vacancies
West	1131	1834.6	2115.6
Ontario	1102.5	2139.8	2531.8
Quebec	1052	1695.7	2015.5
East	984	1452.4	1680.1
National	1104.5	1834.8	2115.6

Figure 10 – Hours on call based on allotted and actual FTE's.

Perfusionists in Canada have undoubtedly taken on significant work beyond standard working hours. The demand on teams has been large and the question was posed to team leaders regarding whether or not they tracked overtime hours of their members. Ten departments reported tracking their overtime hours, with teams working between 600 and 2500, with the average being over 1400 hours per year. Results are outlined in Figure 11.



Figure 11 – Average overtime hours worked in reference to allotted and actual FTE's.

Teams and Statistics

Leaders were asked a number of statistical questions regarding team sizes and some of the work they do in order to better understand what cardiac teams are accomplishing. The average number of perfusionists making up departments was 9.5 per team, with 5 cardiac surgeons per team, and the average number of cardiac anesthesiologists being 10 per center. The average number of adult cardiac cases per year was 807 per cardiac center. Taking into account the actual number of perfusionists working in each department, it leads to a caseload of 99 cases per actual FTE. Ten centers reported offering durable ventricular assist devices (VAD's) with an average of 6 VAD's per year. Seven departments reported being heart transplant centers, with an average of 20 procedures per year. Four centers reported offering lung transplants, with an average of 54 procedures per year. The majority of departments (83%) were the primary service responsible for intra-aortic balloon pumps (IABP's), reporting an average of 54 IABP's per year. Four centers (17%) noted responsibility for hyperthermic intraabdominal chemotherapy (HIPEC) procedures, with an average of 23 procedures per year. Half of the

departments (50%) use viscoelastic testing in cardiac surgery with 75% of those using a transfusion algorithm and 77% having perfusionists responsible for testing. The number of cell salvage procedures was reported between 50 and over 1700, indicating a wide variance in utilization with an average of 541 per institution. Perfusionist’s role in trans aortic valve replacement (TAVR) was reported as 11/24 centers being involved with 6 offering a bedside model with 5 utilizing a float model.

With extra corporeal life support (ECLS) being an ever increasing part of perfusion departments, the attempt was made to better understand the number of patients being supported and the impact on workload. The variability in the number of cases supported was evenly spread, with the largest number of departments supporting less than 20 cases per year. The results are outlined in Figure 12.

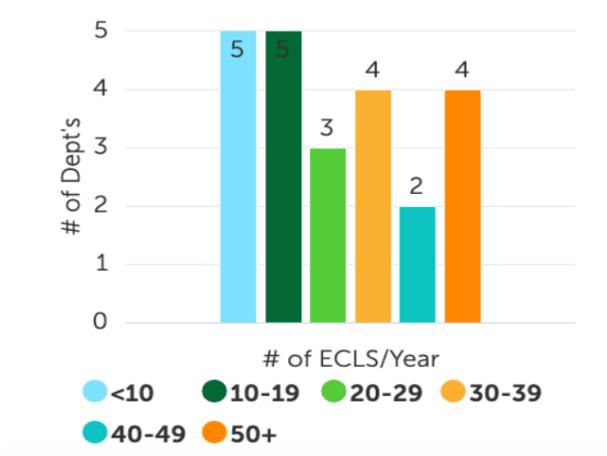


Figure 12 – Number of departments supporting ECLS cases by category.

The range of actual ECLS cases performed was as low as 3, and as high as 109, with the average being 27 cases per year. The majority of departments have a perfusionist in house (bedside or float) for all hours of ECLS coverage. Only two programs reported using an ECLS specialist model in adults. In a post pandemic environment, the question was asked as to the maximum number of ECLS patients that may be managed by one perfusionist, and it was noted to be between 3 and 9, with an average of 7.

Equipment and Additives

A few questions were asked regarding equipment, the use of an electronic medical record, the use of microplegia, and the routine use of albumin in prime solutions. The results are outlined in Figure 13.



Pump?

- LivaNova S5 67%
- Quantum HLM 17%
- Terumo System 8%
- Maquet HL20 4%



EMR?

- 58% using an EMR
- Epic 29%
- Connect 29%
- Spectrum Viper 13%
- Other 13%



Microplegia

- 38% (9 users)



Albumin?

- 38% (9 users)
- West 2/10
- Ontario 2/6
- Quebec 3/5
- East 2/3

Figure 12 – Equipment and Additive Responses

Perfusion Perspectives

In a time when healthcare workers are re-evaluating their working lives, questions were asked of individual members regarding post-pandemic attitudes. A large percentage indicated they felt they disagreed with the idea that they maintained a healthy work life balance (39%) versus those that agreed (40%) and those having no opinion (21%). As to whether or not the Covid pandemic altered those attitudes, 69% indicated the pandemic had an impact. A higher impact was noted on female respondents (76% vs. 63% of males), with perfusionists in younger age categories noting a greater impact (79% of 20-30 year old's, 73% of 31-50 year old's, and 60% of respondents over 50 years of age).

In efforts to gauge the satisfaction and portability of perfusionists, the question was asked if one would leave their current institution for an offer of a 15% pay increase. Overall, 35% of respondents noted they would leave to take an offer of increased salary. Respondents in the western provinces were noted to most likely take an offer to move at 39%, while those in Quebec were most likely to stay with 72% of respondents indicating so. When asked if one would refer someone to work as a perfusionist in their institution, 61% indicated so, with Ontario perfusionists having the highest recommendation rate at 71%, and Quebec respondents having the lowest rate at 52%. When asked as to whether or not members felt supported by their administration leaders, 31% did not feel supported, with Ontario perfusionists feeling the most supported at 40%, with Quebec and the Eastern provinces feeling the least supported at 17% each. Lastly, a question was asked regarding mentorship; encouragingly, 64% of respondents felt their departments mentors new perfusionists well.

Future Work

Both surveys offered a chance for feedback for future information perfusionists may be interested in. Requested possible questions were identified surrounding advance practice models, staffing models including compensation, call structure and ECLS coverage, and a delve into cardiopulmonary bypass times per procedure, bleeding rates post bypass, along with

transfusion rates. All of this may be explored in future survey's or referred for more structured research.

Communication

For Questions/Comments, please contact president@cscp.ca