

Outlook on the Atlantic Physician Workforce

2019

A collaboration between



Memorial
University



NS NB
PEI
Dalhousie
University



CENTRE DE FORMATION MÉDICALE
DU NOUVEAU-BRUNSWICK

Centre de Formation
Médicale du NB



Canadian Federation
of Medical Students

Preface

We are entering an exciting era where technology and medicine are being integrated together. The upcoming generation of doctors will experience the biggest changes to healthcare delivery in Canadian history. When comparing our health system with other high-income countries, Canada is arguably lagging behind in several areas. This can be alarming when we consider the rise of private multibillion-dollar companies that employ computers that use artificial intelligence and big data. The fate of public Canadian healthcare delivery depends on how effectively and quickly it can be integrated with technology. The incoming supply of doctors should be provided with the tools they need to thrive in tomorrow's health system. This report aims to provide an important tool to medical students: data.

Looking at health from a national perspective, productivity is a key metric for economic growth. The more productive a system is, the less resources are needed to deliver set outcomes. In health care, it can be difficult to quantify productivity because outcomes are not always objective. However, most would agree that having 98 trained medical students not match to a residency program in 2019 is not a productive use of human resources. Furthermore, the proper distribution of physicians can be hindered by training the wrong number and specialty mix of residents. This could exacerbate suboptimal work conditions both for oversaturated specialties (difficulty finding a job) and high need specialties (unrealistic work expectations and burnout). The field that deals with these intricacies is called physician resource planning. In Canada, physician resource planning is a provincial responsibility and generally speaking, the outcomes of strategic planning are mostly disseminated by means of a physician resource plan or via health authorities official reports. Separately, at the national level, there are a few organizations, both governmental and non-profit, that host health data publicly. Regardless of whether this data is part of a report or in a large database, it is difficult and time consuming for medical students to find pertinent data to inform their professional orientation.

The goal of the Atlantic Task Force was to present the most up-to-date and relevant data from the current and projected physician workforces in Atlantic Canada. I hope the creation of this document will springboard further advocacy for the collection of more accurate data that can be modelled to forecast future physician needs. Eventually, artificial intelligence (machine learning) could be integrated in these databases to assist health human resource strategy. I hope that this report will foster collaboration between health stakeholders in Atlantic Canada, primarily between provincial health authorities and medical students/faculties. With joined efforts between government and the incoming physician workforce, genuine dialogue can be had early in medical education to help medical students in making informed career choices based on both personal interest and social accountability.

Cheers,



Dax Bourcier

CFMS Atlantic Regional Director 2018-2019

Atlantic Task Force Chair



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- The national organizations **CMA**, **CIHI**, and **CAPER** for sharing health data, for their prompt processing of multiple data requests, and for providing useful recommendations for interpreting their data sets. Thank you to Mr. Geoff Barnum for presenting CAPER data during one of the Atlantic Task Force teleconference meetings.



- The Atlantic **provincial medical associations** for each taking the time to meet with us, for providing the descriptions of your organizations, and for the assistance and recommendations for best practices in connecting with health authorities



- The **Provincial Health Authorities and members of the Ministries of Health** for their interest in collaborating on physician resource planning. Specifically, we thank the Honourable Ginette Petitpas Taylor (past federal Minister of Health), Dr. Rodney Wilson (Nova Scotia Health, physician advisor), Mr. Ted Flemming (NB Minister of Health), Mr. Andrew Wells (Newfoundland and Labrador Department of Health and Community Services, director of medical services), and Dr. Dennis Rashleigh (Newfoundland and Labrador Western Health, vice-president of medical services) for the productive meetings we had with you.
- **OMSA** and **FMEQ** for pioneering unique reports targeting health human resources and Quebec residency programs, respectively. Your work inspired each one of us to complete our report, the Outlook on the Atlantic Physician Workforce.



- The resident association **MarDocs** for their interest and input in the creation of our report.



To our knowledge, this is the first report resulting from the collaboration between medical students from every medical campus and province in Atlantic Canada. The CFMS wants to recognize the 12 leaders who volunteered countless hours and their expertise in creating this anticipated report for Atlantic medical students. Here are the members of the 2019 CFMS Atlantic Task Force:

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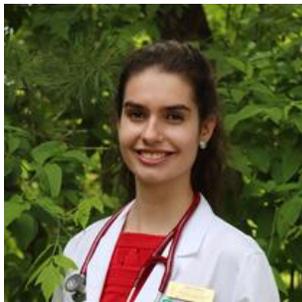
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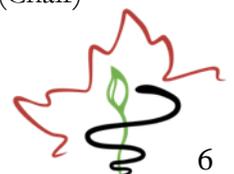
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Introductions

Healthcare in the Atlantic provinces with a focus on the physician workforce will be uncovered in this report. In this section, you will find some quick facts, followed by input from the provincial medical associations. Additionally, a map will be provided with the main health facilities with the number of working physicians in each specialty by health region for each Atlantic province.

New Brunswick

With a population of over 750, 000 New Brunswick is a province with a unique mix of rural and urban locations to live and work. Health care in this province is carried out through 2 health authorities; Horizon Health and Vitalité Health Networks. Vitalité covers the northern and southeastern parts of the province through nearly 60 points of entry to care and 582 physicians. While Horizon provides care through another 12 hospitals and 100 other medical facilities through employment of 1, 100 physicians. Heart and respiratory problems, as well as newborn admission, are among the most common reasons for admission to hospital in the province of New Brunswick.

Medical education in New Brunswick is available through two universities, respectively Dalhousie University in Saint-John and Université de Sherbrooke in Moncton. There are on average 25 students admitted every year at each campus. Four residency programs are available in New Brunswick : Family Medicine, Emergency Medicine, Internal Medicine and Psychiatry. Notably, New Brunswick has the first and only single-entry integrated Family and Emergency Medicine 3 year residency program where students complete the program with both distinctions. This program has 2 seats for Canadian Medical School Graduates and is based out of Saint John but routinely uses rural sites around the province for integral training opportunities.

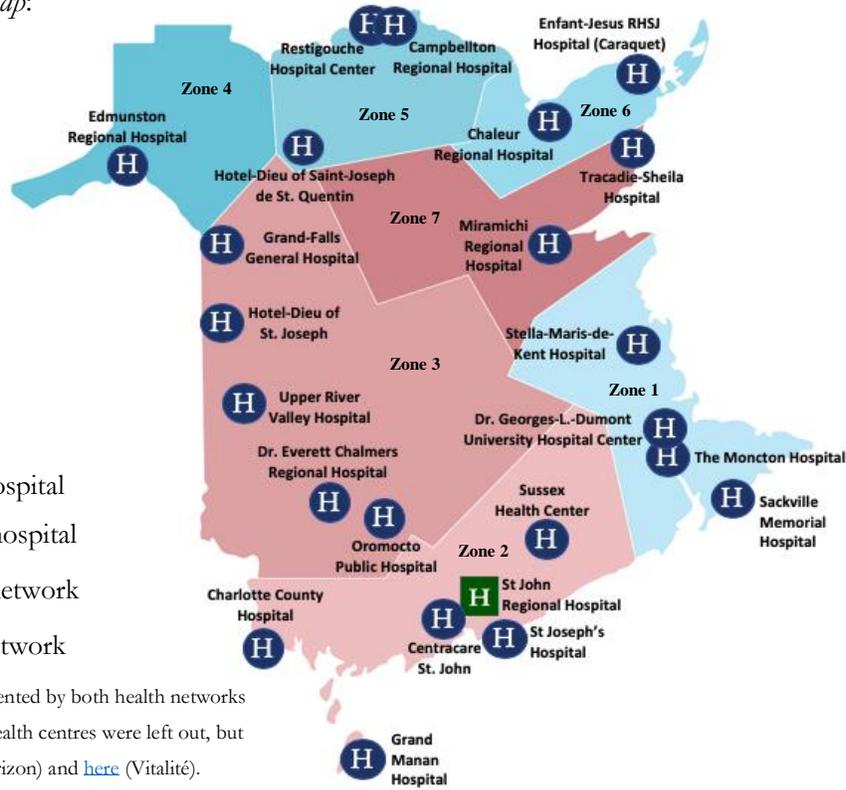
This prospective report on physician workforce aims to bridge the gap between needed medical specialties in New Brunswick and medical student career planning. Dalhousie undergraduate medical program begins electives during the first year while Sherbrooke begins in their third year. Each faculty strives to introduce students to the evolving needs of health care in the region.

Input from the New Brunswick Medical Association

Founded in 1867, the New Brunswick Medical Society (NBMS) is the professional association representing all physicians in New Brunswick. It is a provincial division of the Canadian Medical Association (CMA). The NBMS has a two-part mission: to represent and service all practicing and future physicians in the province, and to advocate for the health of New Brunswickers. The NBMS continues to advocate for improved healthcare delivery for New Brunswick patients. We have led the way in various initiatives such as the implementation of electronic medical records and the promotion of team-based healthcare delivery. We have also been successful in promoting healthy living initiatives and policy changes to protect youth from hazards like smoking and tanning beds.

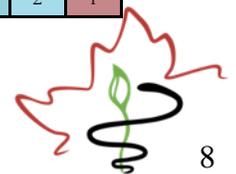


NB Workforce Map:



Specialties	Number of working physicians by region						
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Anatomical Pathology	12	8	8	2	2	2	3
Anesthesiology	27	22	12	4	5	6	4
Cardiac Surgery	2	6	1	0	0	0	0
Dermatology	6	3	2	1	0	1	0
Diagnostic Radiology	19	20	7	7	3	5	2
Emergency Medicine	18	11	3	0	0	0	0
Family Medicine	308	210	222	80	19	103	54
Pediatrics	17	16	8	1	2	4	2
General Pathology	1	1	2	1	1	1	0
General Surgery	16	10	9	3	2	6	3
General Internal Medicine	72	7	10	7	3	5	6
Cardiology	10	15	1	0	0	3	1
Critical Care Medicine	1	3	3	0	0	0	0
Clinical Immunology/Allergy	2	0	0	0	0	0	0
Endocrinology	2	3	2	0	0	0	0
Psychiatry	23	22	21	3	10	8	3
Gastroenterology	9	3	3	0	0	0	0
Infectious Diseases	3	1	0	0	0	0	0
Nephrology	6	5	0	0	0	2	0
Respirology	7	1	0	0	1	0	0

Specialties	Number of working physicians by region						
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Rheumatology	5	3	4	0	0	1	0
Geriatric Medicine	2	4	3	0	0	0	0
Hematology	5	2	0	0	0	0	0
Radiation Oncology	5	8	0	0	0	0	0
Medical Oncology	6	5	3	0	0	0	0
Neurology	7	4	3	1	0	0	0
Neurosurgery	7	5	0	0	0	0	0
Obstetrics and Gynecology	14	11	14	4	1	5	4
Ophthalmology	9	6	6	2	1	3	3
Orthopedic Surgery	12	10	8	2	1	5	1
Otolaryngology	6	4	3	0	1	0	0
Urology	6	7	1	1	1	2	1
Plastic and Reconstructive Surgery	4	5	5	0	0	2	0
Physiatry and Rehabilitative Medicine	2	3	6	0	0	0	0
Nuclear Medicine	2	1	0	1	0	1	0
Public Health and Preventive Medicine	2	3	3	0	0	1	0
Vascular Surgery	3	2	1	0	0	0	0
Urology	6	7	1	1	1	2	1



Prince Edward Island

With a population of about 140,000 people, Prince Edward Island is the smallest province in Canada in terms of both population and land mass. It is best known as a tourism destination because of its pristine beaches and fantastic golf courses, however in recent years it is becoming known for its innovation in healthcare and integration of health systems. This is due to the fact that you can drive from tip to tip in under 4 hours, and the relatively small population, the Island healthcare system is a prime opportunity for implementing innovations in healthcare.

Prince Edward Island does not have a medical school of its own, however it does have affiliations with several medical schools in Eastern Canada. The province assures that Island students have a chance to train at medical schools in the Atlantic provinces by funding seats at the 3 different medical schools. The government annually funds 6 seats at Dalhousie University in Halifax, NS, 4 seats at Memorial University in St John's, NL and 1 seat at Université de Sherbrooke in Sherbrooke, QC. PEI is also a training site for core clerkship rotations for each the three medical schools previously mentioned as well as for elective students from across Canada. The PEI Family Medicine Residency Program is a training site for Dalhousie University and follows the Dalhousie curriculum. The PEI program funds 4 residency training seats for graduates from Canadian medical schools, and one residency seat for a graduate from a recognized medical school outside the country.

In 2018, there were 296 practicing physicians in PEI, including: 178 family physicians, 73 medical specialists, 7 laboratory medicine specialists, and 38 surgical specialists. Family medicine and medical specialties are the highest demand specialties in the province (details available further in this document). The majority of physicians work in an urban setting, though a fifth of family physicians work in rural areas. The average age of working physicians in PEI is 53 years old, a third of all physicians in the province are female, and three-quarters are Canadian Medical Graduates (CMGs).

The majority of Health Services are offered at the two largest hospitals in PEI, the Queen Elizabeth Hospital in Charlottetown and the Prince County Hospital in Summerside. There are several smaller hospitals on the Island including the Souris Hospital in Souris, the Kings County Memorial Hospital in Montague, the Community Hospital in O'Leary and Western Hospital in Alberton. Family physicians can be found in collaborative practices working under both salaried and fee-for-service models in almost every town in Prince Edward Island and in the two major population centres.

One fifth of the population of PEI is over the age of 65, which contributes to increasing rates of chronic disease in the province. Cancer, heart disease, stroke, and chronic lower respiratory disease are the leading causes of morbidity and mortality in PEI. The social determinants of health also play a significant role in the island's population health. The average household income in PEI is lower than the national average. The rates of mood disorders, obesity, diabetes, and hypertension in PEI are above the national average, with the highest rates seen among Islanders with the lowest incomes. However, Islanders also report protective factors, such a strong sense of community and a desire to improve their health.

Health PEI is working towards creating an integrated Electronic Health Record for all citizens of PEI. The province implemented the use of a Clinical Information System in all of its hospitals over ten years ago which includes patient medical records, imaging and laboratory testing results as well as computerized physician order entry. More recently, there has been a push for family physicians to be integrated into the Electronic Health Record by using Electronic Medical Records in their offices.



The province has also taken advantage of advances in technology and is now using Telemedicine to connect patients in need at Western Hospital with physicians in other parts of the province as well as physicians practicing in other provinces.

Input from the Medical Society of Prince Edward Island

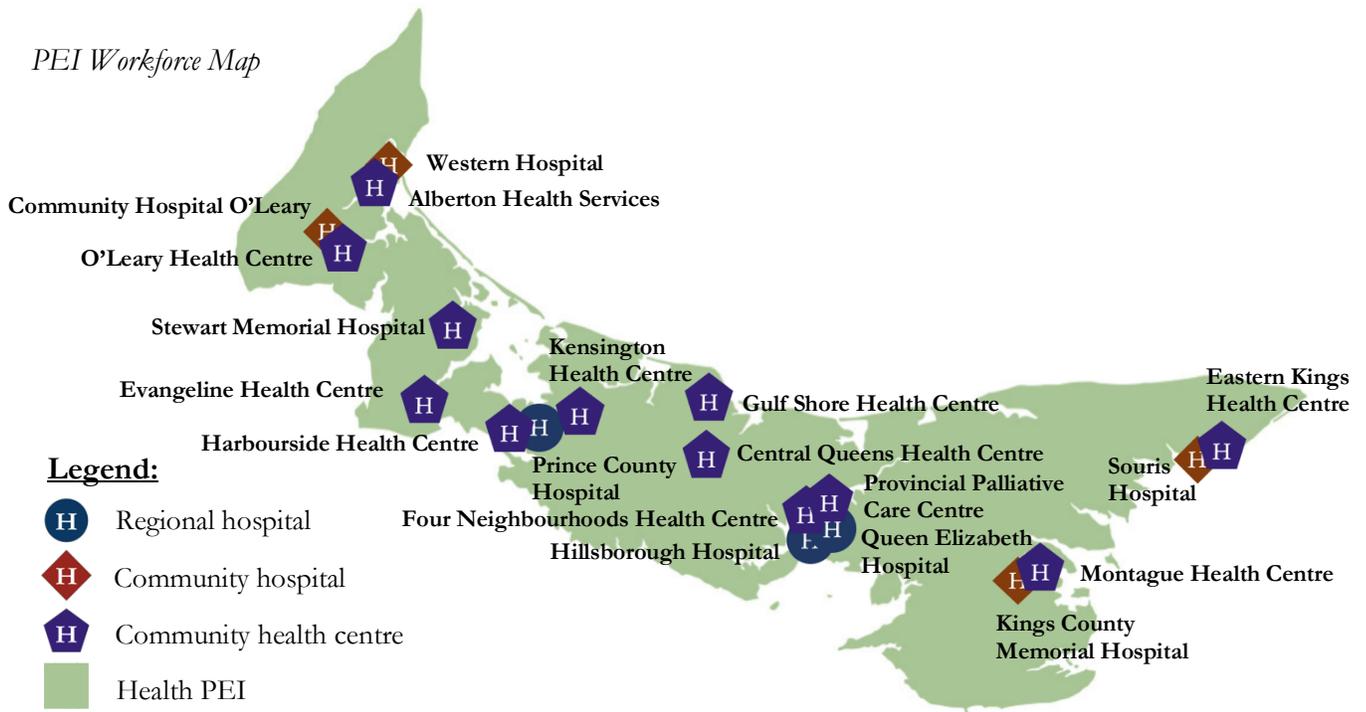
Established in 1855, the Medical Society of PEI (MSPEI) is the second oldest medical society in Canada, representing 400 physicians, retired physicians, medical residents and students in PEI. As the united voice of PEI physicians, we strive to help create a high-quality and sustainable health-care system of which physicians and patients are proud.

Our priorities for 2019-2023 are to:

1. Support physicians in growing their leadership abilities so they can have an even greater impact in improving how care is delivered on the Island;
2. Help create a healthy and resilient physician workforce through health and wellness programs and awareness;
3. Negotiate competitive compensation and administer member benefits to foster a positive and attractive place for physicians to work;
4. Work with government to:
 - a. improve physician recruitment and retention;
 - b. advance health innovation and technology, including introducing a high-quality provincial electronic medical record; and
 - c. identify ways where physicians can have the greatest impact on population health (i.e. advancing public health issues).
5. Run an organization using best governance practices and with the highest degree of professionalism



PEI Workforce Map

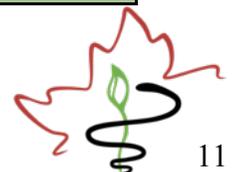


Legend:

-  Regional hospital
-  Community hospital
-  Community health centre
-  Health PEI

Specialty	Number of Working Physician in PEI
Anatomical Pathology	3
Anesthesiology	12
Cardiac Surgery	0
Dermatology	1
Diagnostic Radiology	9
Emergency Medicine	8
Family Medicine	174
Pediatrics	10
General Pathology	4
General Surgery	10
General Internal Medicine	17
Cardiology	1
Critical Care Medicine	0
Clinical Immunology/Allergy	0
Endocrinology	0
Psychiatry	11
Gastroenterology	1
Infectious Diseases	0

Specialty	Number of Working Physician in PEI
Nephrology	2
Respirology	2
Rheumatology	0
Geriatric Medicine	0
Hematology	0
Radiation Oncology	1
Medical Oncology	1
Neurology	4
Neurosurgery	0
Obstetrics and Gynecology	9
Ophthalmology	6
Orthopedic Surgery	5
Otolaryngology	3
Urology	4
Plastic and Reconstructive Surgery	3
Physiatry and Rehabilitative Medicine	1
Public Health and Preventive Medicine	1
Medical Microbiology	1



Newfoundland and Labrador

Newfoundland and Labrador comprises the most easterly province of Canada with a population of 528,000 people, of whom 92% reside on the island of Newfoundland. The province is known for its rich landscape, colourful architecture, and welcoming populace—in fact, according to Maclean’s magazine we are home to one of the Top 10 Friendliest Cultures in the World.

Our healthcare system is divided into Eastern, Central, Western, and Labrador/Grenfell Health to appropriately serve the vast expanse of geographic areas. We have 29,000km of coastline and 405,212km² of land mass—more than three times the total size of the Maritime provinces. The Department of Health collaborates with the Newfoundland and Labrador Centre for Health Information and Memorial University of Newfoundland (MUN) Medical School to coordinate health infrastructure to optimize healthcare delivery across the province.

MUN Faculty of Medicine is the only medical school in the province and strives to encourage physicianship both within the province and in Atlantic Canada more broadly. Indeed, each year our medical program receives 750 applicants for 80 seats. 57 of these seats are from Newfoundland and Labrador (3 of which are for Aboriginal students), 10 from New Brunswick, 4 from Prince Edward Island, and 6 from out of province. The school aims to recruit applicants who demonstrate the humanistic qualities of integrity, personal insight, maturity, and motivation—qualities that are deeply valued within the province and in the CanMEDS framework as a whole. MUN Faculty of Medicine recruits 78 new residents each year across 19 postgraduate medical education programs.

As of 2018, Newfoundland and Labrador has 1,501 practicing physicians; of whom approximately 910 are general practitioners, 420 are medical specialists, 171 are surgical specialists (specific details will be provided further in this document). Over half of these physicians are currently practising in the St. John’s metropolitan region, leaving a minority of physicians to practice in rural Newfoundland and Labrador. Yet, 42% of the province’s population is rurally located, making rural Newfoundland and Labrador acutely underserved. Further, over three-quarters of specialists and only one-third of general practitioners across the province are concentrated in St. John’s. Therefore, travel and locum work to underserved areas are not uncommon. Across the province, Canadian Medical Graduates (CMG)—and more specifically, MUN graduates—are concentrated in Eastern Health; whereas Foreign Medical Graduates (FMG) dominate Central, Western, and Labrador/Grenfell Health (SMBD Historical Data, 2017). In other words, FMGs prevail in rural Newfoundland and Labrador.

Rural communities are a hot target for new physician graduates, offering incredible experiences, challenges, and scope of practice truly unique to the province. These communities are also some of the most beautiful in Canada: with stunning landscapes and natural beauty ranging from mountain ranges, rugged shorelines, dense boreal forests, and arctic tundra, each community has its own charm and appeal. The dramatic coastal scenery envelopes the province at nearly every turn, leaving no day short of awe-inspiring views. Whether you are an outdoor adventurer or not, there is something for everyone in this province.

Newfoundland and Labrador ranks above average across Canada for accessibility to health and patient safety. For example, 89.1% of Newfoundlanders have a regular healthcare provider, versus 83.6% for the rest of Canada. We have lower rates of in-hospital sepsis, obstetric traumas, falls in long-term care, and worsened physical and cognitive functioning in long-term care. However, we rank



below average for appropriateness and effectiveness of healthcare delivery and social determinants of health. Areas for improvement in our systemic efficiency include lowering our higher than average rates of potentially inappropriate medication prescriptions and ambulatory care sensitive conditions (those conditions which may have been prevented by primary care interventions). With respect to social determinants of health, we have less children vulnerable in areas of early development, but higher rates of heavy drinking, smoking, obesity, and physical inactivity. Demographically speaking, 19.8% of our population are seniors, 2.4% are immigrants, and 8.9% are Aboriginal. If you are interested in helping tackle the complexities of Newfoundland and Labrador's health system, then this may be the province for you!

Input from the Newfoundland and Labrador Medical Association

The Newfoundland and Labrador Medical Association (NLMA) is the voice of organized medicine in Newfoundland and Labrador. The NLMA is a non-profit, professional organization funded primarily by its members. Its mission is to represent and support a united medical profession and provide leadership in the provision of excellent health care in Newfoundland and Labrador.

The NLMA represents the political, clinical, and economic interests of the province's medical profession. As the representative for physicians in contract negotiations, it is committed to negotiating competitive compensation and benefits for members. It also advocates on behalf of all patients for a fair and equitable health care system.

The provincial Medical Act, 2011 legislation requires that all practising physicians hold membership in the NLMA as a condition of licensure. Medical students and residents enrolled at Memorial University's Faculty of Medicine and retired physicians are also eligible for membership in the Association. The NLMA is governed by its members, who meet each year for the annual general meeting.

From its beginning in 1924, the NLMA has played a vital role in the development and promotion of health care services across Newfoundland and Labrador. Today, the NLMA represents some 1,300 practising physicians and approximately 470 medical students and residents in the province.



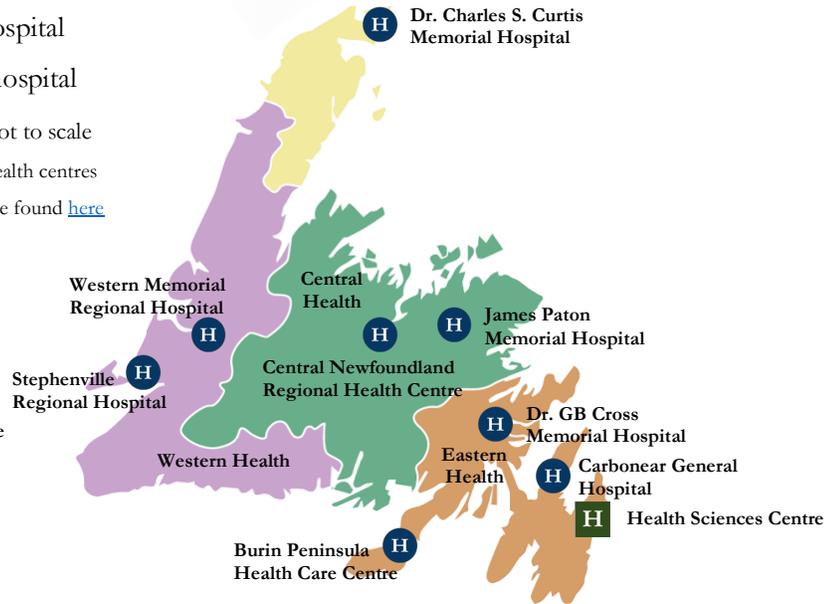
NFLD Workforce Map



Legend:

- H Tertiary hospital
- H Regional hospital

Note: This map is not to scale and H community health centres were left out, but can be found [here](#)



Specialties	Number of Working Physician by Region			
	Eastern	Central	Western	LG
Anesthesiology	51	7	9	4
Dermatology	10	1	1	0
Emergency Medicine	2	0	0	0
Public Health and Preventive Medicine	3	0	0	1
Family Medicine	456	114	107	46
Psychiatry	58	6	7	1
Pediatrics (general)	51	6	4	1
General Internal Medicine	61	10	13	2
Cardiology	14	0	1	0
Critical Care Medicine	6	0	0	0
Clinical Immunology/Allergy	1	0	1	0
Endocrinology	8	0	0	0
Gastroenterology	8	1	0	0
Infectious Diseases	3	0	0	0
Nephrology	1	0	0	0
Respirology	1	0	0	0
Rheumatology	0	0	0	0
Geriatric Medicine	0	0	0	0
Hematology	1	0	0	0
Radiation Oncology	11	0	0	0
Medical Oncology	1	0	0	0

Specialties	Number of Working Physician by Region			
	Eastern	Central	Western	LG
Neurology	8	2	2	0
Physiatry/Rehabilitative Medicine	5	0	1	0
General Surgery	34	8	8	5
Cardiac Surgery	4	0	0	0
Neurosurgery	4	0	0	0
Obstetrics and Gynecology	30	7	6	4
Ophthalmology	12	3	3	1
Orthopedic Surgery	18	5	5	1
Otolaryngology	11	2	0	1
Urology	10	2	2	0
Vascular Surgery	2	0	0	0
Plastic and Reconstructive Surgery	4	0	0	0
Medical Genetics and Genomics	1	0	0	0
Nuclear Medicine	2	0	0	0
Diagnostic Radiology	46	9	10	0
Anatomical Pathology	19	3	3	1
General Pathology	3	0	2	0
Hematological Pathology	1	0	0	0
Neuropathology	1	0	0	0
Medical Microbiology	1	0	0	0



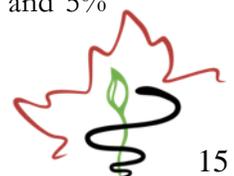
Nova Scotia

Nova Scotia (NS) is the largest of the maritime provinces and is home to nearly a million Canadians, of which 40% reside in rural communities. The planning and delivery of healthcare services is managed by the Nova Scotia Health Authority (NSHA), with strategic directions that aim to achieve person-centered, high-quality, safe and sustainable health and wellness.

Medical education in the province is offered by Dalhousie University through a 4-year MD program and a multitude of residency and fellowship programs. Around 110 students enroll in MD training every year; more than 91% of which hail from the Maritimes with designated seats to students from Nova Scotia, New Brunswick, and Prince Edward Island. Dalhousie has more than 100 teaching sites across the Maritimes and affiliations with nearly 1,800 clinical faculty members. In 2010, Dalhousie launched a medical education program in Saint John, New Brunswick in support of provision of healthcare services at the local level. Medical education at Dalhousie emphasizes early clinical exposure, inter-professional education and distributed learning, including rural experience and community outreach. Furthermore, students are required to complete a research project, with the opportunity to pursue personal interests and work closely with researchers from various disciplines. In 2018, 103 Dalhousie graduates matched to residency programs, and 5 did not. Also, Dalhousie had 75 positions available in Royal College programs and 57 in family medicine; of that, 120 positions were filled. Currently, over 560 Dalhousie residents and 50 Royal College specialty programs (including 24 subspecialties) train in sites across the region, providing a significant proportion of patient care in health centres. Specialty programs have been developing and implementing competency-based medical education models, which allow residents to identify areas of their practice that require further training and support. With regard to continuing professional development, Dalhousie facilitates various academic opportunities to over 900 family physicians and 550 specialists.

The availability of an adequate workforce is fundamental to the sustainability of the healthcare system and is the subject of ongoing and careful planning. In 2017, the number of family physicians in NS was 1,234 (average age 52.3, 68.8% Canadian trained), which alarmingly was a 1.7% drop compared to 2013, on the background of a 1.5% population growth. The number of specialists between 2013 and 2017, however increased from 1206 to 1222 (average age 51.7). Nova Scotia has 129 and 257 family and total physicians per 100,000 population, respectively, which interestingly is the highest in the country for total physicians. The number of physicians who migrated out of NS in 2017 (43 total, 17 family medicine) outweighed the number of physicians who migrated into it (7 total, 4 family medicine). Discrepancies in workforce distribution is a barrier to access to care for many Nova Scotians, with only 27.9% of family physicians and 11.4% of specialists practicing in rural areas. Certainly the need for more physician in NS exists, particularly family physicians. As of November 2018, there was 52 available opportunities for family physicians, 37 for medical specialties, 4 for laboratory medicine, and 10 for surgical specialties. Recruitment is primarily driven by population need and is shaped by Department of Health and Wellness physician resource planning. As such, NSHA recruited 30 family physicians and 37 specialists between April 2018 and January 2019, and efforts are underway to fill existing gaps. It is therefore crucial to be proactive in anticipating future need for physicians and institute measures that aim to ensure a sufficient workforce.

Nova Scotia is Canada's second smallest province with a population of approximately 921,725 people, 42.3% of which reside in Halifax Regional Municipality. The Nova Scotia population is made up of 98% Canadian citizens, 5.2% visible minorities, 3.7% people of aboriginal identity and 5%



immigrants. From 2001 to 2011, there has been a 1.5% population increase. The leading causes of death include cancer, major cardiovascular disease and unintentional injuries or accidents.

In 2011, approximately 64,000 (7%) of people in Nova Scotia were living in low income. Among both renters and owners in Nova Scotia, 22% spend > 30% of household income on shelter costs. Nova Scotia has an unemployment rate of approximately 9% in comparison to the national rate of 7%. Despite this, 58% of the population reports their health status as excellent. 72% report their mental health as excellent, and 71% of the population report feeling a good or strong sense of belonging.

A document prepared by the Health Association Nova Scotia identified three main issues as the most crucial affecting rural health and service delivery in Nova Scotia. Those themes were 1) Poverty; 2) Access to services and; 3) How service provision decisions are made. Access to health care was also identified as an issue, with many specific examples such as lack of access to mental health services. Finally, discrepancies in how service provision decisions are made “fosters feelings of distrust, frustration, vulnerability, and of being misunderstood.” (Rural Health and Service Delivery in Nova Scotia 2013). Based on this report, many recommendations were put forward.

The future of healthcare in Nova Scotia is an exciting topic with many technological advances on the cusp which will improve patient care. Nova Scotia is working on implementing a paperless electronic medical record system in the acute care environment which would amalgamate inpatients medical data. Moreover, Nova Scotia recently added 11.5 million dollars in funding for Dartmouth General Hospital expansion. Finally, the IWK is the first hospital in the Maritimes to get a baby-friendly initiative designation.

Input from Doctors Nova Scotia

Doctors Nova Scotia (DNS) is the oldest medical association in Canada, representing more than 3,500 physicians, including practising and retired physicians, and learners.

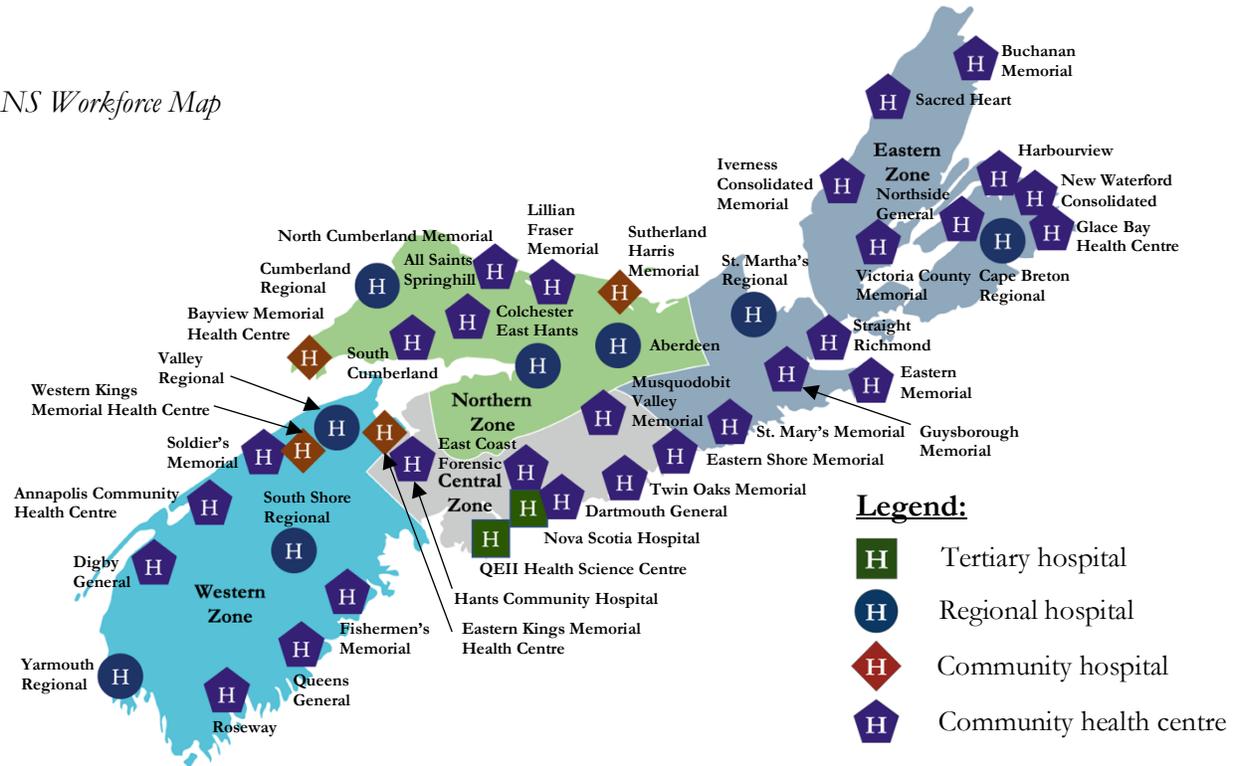
We’re dedicated to helping physicians thrive and have a positive impact on their patients’ lives, individually and within the health-care system. Committed to working with all partners in health-care delivery, DNS works to ensure that Nova Scotia is positioned to recruit and retain physicians, introduce innovative ways to deliver health care, and improve patient access.

Doctors Nova Scotia is governed by a physician Board of Directors that provides the association with its overall strategic direction. The sole bargaining agent for Nova Scotia physicians, DNS negotiates all funding contracts with the province on physicians’ behalf.

The association provides its members with a comprehensive health and dental plan, life and disability insurance and parental leave. It also offers several support programs for physicians in every stage of their careers: the Physician Advisory Team provides physicians with on-the-ground practice support; the Physician Leadership Program helps physicians hone their leadership skills to foster health system improvement; and the Professional Support Program supports physicians who are experiencing personal or professional problems.



NS Workforce Map



Legend:

-  Tertiary hospital
-  Regional hospital
-  Community hospital
-  Community health centre

Specialties	Number of working physicians by region			
	Central	Western	Eastern	Northern
Anatomical Pathology	30	4	7	2
Anesthesiology	99	18	8	10
Cardiac Surgery	16	0	0	0
Dermatology	14	1	2	0
Diagnostic Radiology	54	22	15	9
Emergency Medicine	21	2	1	1
Family Medicine	705	234	196	151
Pediatrics	109	9	10	6
General Pathology	5	1	0	1
General Surgery	32	13	13	15
General Internal Medicine	46	20	15	10
Cardiology	32	4	5	0
Critical Care Medicine	8	1	1	1
Clinical Immunology/Allergy	2	0	0	0
Endocrinology	7	0	1	0
Psychiatry	115	14	21	12
Gastroenterology	16	2	1	3
Infectious Diseases	4	2	0	0
Nephrology	11	1	2	0

Specialties	Number of working physicians by region			
	Central	Western	Eastern	Northern
Respirology	7	0	1	0
Rheumatology	9	1	0	0
Geriatric Medicine	9	0	1	0
Hematology	9	0	2	0
Radiation Oncology	13	0	4	0
Medical Oncology	16	1	4	0
Neurology	30	1	2	0
Neurosurgery	9	0	1	0
Obstetrics and Gynecology	40	12	11	9
Ophthalmology	31	7	7	3
Orthopedic Surgery	39	7	5	5
Otolaryngology	21	5	4	2
Urology	15	4	2	3
Plastic and Reconstructive Surgery	11	2	2	0
Physiatry and Rehabilitative Medicine	11	0	1	0
Medical Genetics and Genomics	3	0	0	0
Nuclear Medicine	6	0	0	0
Public Health and Preventive Medicine	4	0	2	0
Vascular Surgery	6	2	2	0



Methodology

The topic selection for this report was determined using the Delphi method of consensus. The first round, consisting of a list of proposed issues that could be addressed through Atlantic collaboration, were sent to each medical student society president and CFMS representatives of Atlantic medical faculties and campuses. The second round surpassed the 80% threshold of consensus for the topic of physician resource planning. The Atlantic Task Force (ATF) member selection was completed by means of an open call for applications shared by the Atlantic Regional Director to each medical faculty of the Atlantic provinces. Applicants had to submit a short CV and a 150-word letter of intent to be reviewed by the CFMS Atlantic Regional Director. The two inclusion criteria were that three seats were reserved for each campus and one reserved position for a student from PEI. Past experience in public health was regarded as an asset. The inclusion criteria were satisfied in the final selection of the 12 ATF members.

All ATF members comprised of volunteer medical students representing Memorial University of Newfoundland, Dalhousie University of Nova Scotia and New Brunswick, and Sherbrooke University of New Brunswick. None of the report authors is affiliated with any of the agencies that provided the data, declares conflict of interest, or received monetary compensation for participating in this project. Please contact Dax Bourcier (dax.bourcier@usherbrooke.ca) for all correspondences.

The inclusion criteria for the selection of specialities was based on whether there were more than 10 working physicians in Atlantic Canada. Family medicine is a specialty and thus this report refers to all medical disciplines when employing “specialties”.

The data in this report is published as obtained from the respective resources with no additional manipulation, unless otherwise indicated. All information presented here is publicly available by the following Canadian agencies.

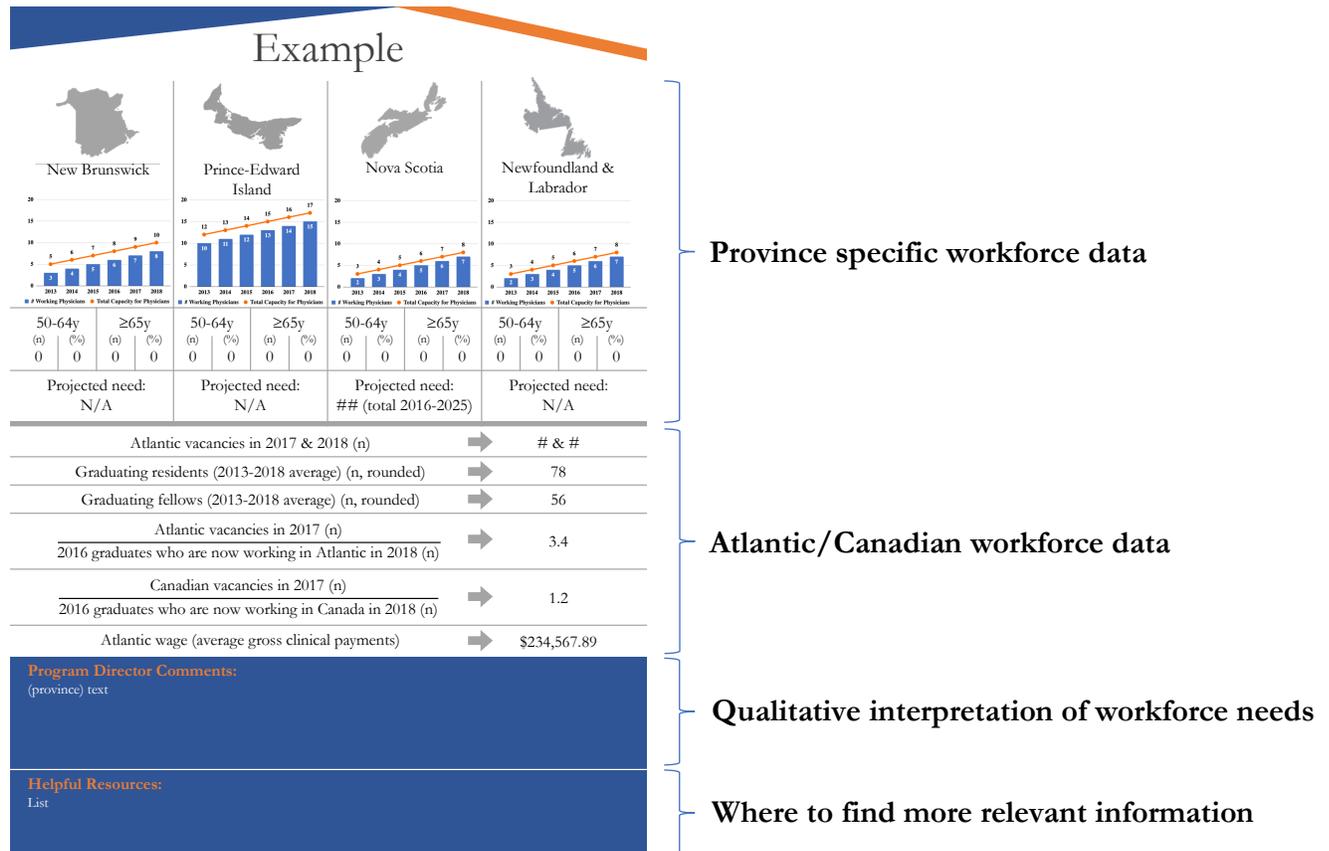
Data Source	Summary
Canadian Institute for Health Information	The Canadian Institute for Health Information (CIHI) provides comparable and actionable data and information that are used to accelerate improvements in health care, health system performance and population health across Canada. CIHI tracks data in the different provinces with the help of information that is provided by hospitals, regional health authorities, medical practitioners and governments bodies. CIHI was the source of the number of working physicians per specialty and per age group, and the average annual wage per specialty. https://www.cihi.ca/en/physicians-in-canada
Canadian Medical Association	The Canadian Medical Association (CMA) Data Centre conducts research that helps work towards getting the right number, mix and distribution of physicians across Canada. CMA data is used by health system planners at all levels to make decisions about allocating resources and support discussions and planning that will improve the health care system and patient outcomes. CMA was the source of the number of vacancies at the Atlantic and Canadian levels. CMA was also used as the secondary source for number of practicing physicians in the event of unavailability or inaccuracy of CIHI data. https://www.cma.ca/physician-data-centre



Canadian Post-M.D. Education Registry	<p>The Canadian Post-M.D. Education Registry (CAPER) is the central repository for statistical information on postgraduate medical education in Canada. Data is gathered on an annual basis from all 17 Canadian Faculties of Medicine. CAPER records capture data throughout postgraduate medical training as well as ongoing practice location following post-M.D. training. CAPER was the source of the following data: post-M.D. trainees (Canadian citizens/Permanent residents only) who completed Canadian training programs at the residency and fellowship levels in 2018. Also obtained was the number of 2016 graduates with practice locations in the Atlantic provinces in 2018. A data request for the aforementioned 2018 data was sent in September 2019. All data presented can also be found in CAPER's 2018/2019 Annual Census.</p> <p>https://caper.ca/postgraduate-medical-education/annual-census</p>
Nova Scotia Provincial Health Authority Forecast	<p>The projected need for physicians in Nova Scotia was obtained from the Nova Scotia Provincial Health Authority Base Case - Workforce Forecast 2016 to 2025. Data for the projected need for physicians in the rest of the Atlantic provinces was not available.</p> <p>https://novascotia.ca/dhw/ShapingPhysicianWorkforce/publications.asp</p>
Program Directors	<p>Members of the ATF reached out to the program directors for each of the residency programs in Atlantic Canada listed on the 2019 CaRMS program descriptions for input into realities of the practice and employability. The process for including their responses, in part or in whole, as part of the ATF report was included in the email. A reply to the email was regarded as informal consent.</p>
Provincial and Territorial Medical Associations	<p>Members of the ATF reached out to the CEOs of each of the four Atlantic Canadian Provincial Medical Associations to advise them of the creation of this report and to seek out any additional data sets that could be useful in the creation of the report. Each PTMA was allowed the opportunity to provide a short introduction for their Association.</p>
Provincial Health Authorities	<p>Members of the ATF reached out to each Provincial Health Minister to advise them of the creation of this report and to promote a working collaboration in terms of physician resource planning. Comments and input to the ATF was included in the report.</p>
OMSA Report	<p>OMSA published a Health Human Resource guide in 2016, which helped establish the direction for our work. To any student from or interested in working in Ontario this is a must read.</p> <p>https://omsa.ca/sites/default/files/page/24/omsa_hhr_guide_2016.pdf</p>



How to interpret the data



Province Specific Workforce Data

Historical trend of physician workforce

The graphs are subcategorized by province (NS, NB, PEI, NFLD) and show a historical trend over time of the relationship between number of working physicians (blue bars) and total capacity for physicians (orange trendline) within that specialty from 2013 to 2018. If you subtract the “Total Capacity for Physician” with the “Total # of working physicians”, the result is equal to the number of available job postings there were in that year. In order to be consistent with the provincial maps shown in the introduction, CIHI data was used since it is the only source that provides health region specific public data. Some CIHI 2018 data for the number of working physicians for Nova Scotia and Newfoundland for the number of working physicians was replaced with 2018 CMA data to address some significant inconsistencies identified by our group.

Why not include 2019 data? Both CIHI and CMA have released data reports in the Fall 2019. It is important to note that CIHI data is dated December 2018 and in order to illustrate data sets that can be compared, 2018 CMA data was used. The “Helpful Resources” section was included to direct those interested towards the latest data releases.



Workforce by age groups

For each province, both the number and percentage of physicians are displayed for those between age 50-64 and beyond age 65 to allow users to deduct whether physicians in the specialty of interest will likely retire by the time they would begin practice.

Projection of physician workforce needs

Projections of physician need (also called physician forecasts) is a data set not yet available in any national public database. This forecasted number typically represents the number of full-time equivalent (FTE) physicians needed to supply the projected demand for physicians in this specialty according to a multitude of demographic factors such as age, gender, ethnicity, socioeconomics, service utilisation, rural vs urban need, epidemiology of disease, and models of care delivery to name a few. Furthermore, although the Royal College is currently addressing this issue in their specialty workforce collaborative, there is currently no national consensus as to how a FTE should be calculated. Thus, only some provincial health authorities in Canada use this type of modelling to strategize the health human resource needs for their province, even though it is seen by many as the gold standard.

Nova Scotia is the only province in Atlantic Canada that uses a physician forecast model, and was in fact one of the first in Canada to use one. The latest public release suggests the total estimated FTE needed per specialty between 2016 and 2025 (in other words, NS would need ## family physicians in 10 years). Through an informative meeting with the NS Health Physician advisor, we were advised to take **important caution when trying to interpret this data for two main reasons: the statistical projections do not always reflect the qualitative input from physicians working in NS (who are on the ground and have first-hand exposure); and second, the model contains many limitations that the NS Health authority acknowledges and are actively working to address.** Our group decided to include this data set with the rationale that medical students would likely benefit from knowing the physician forecast more than any other data to help inform their professional orientation in choosing a specialty.

Atlantic/Canadian Workforce Data

Atlantic vacancies

This data set represents the number of job opportunities available in each specialty in Atlantic Canada **at the moment in time the data was collected.** It does not represent the total different number of job opportunities that were available in the whole year. Thus, it is important to note that many job postings may only be available for a very short period of time before being filled if, for example, it is in high demand.

Number of graduated resident and fellows in Canada

The percentage of graduating residents that pursue fellowship is not currently a data set that is available publicly, which is why we have asked this question to all Atlantic program directors. Consequently, we show the 4-year average number of graduating residents and fellows in Canada as a whole. Combining these two numbers could provide an idea of the number of physicians eligible to fill a vacant position. Further, the total number of fellows per total number of residents could provide an impression of the proportion pursuing their studies following residency training.



Atlantic vacancies / Atlantic physicians 2 years post-grad

This ratio was calculated by dividing the total number of Atlantic vacant spots in 2017 by the number of physicians who completed training programs (either residency or fellowship) in 2016 and were practicing in 2018 in Atlantic Canada. Note that CAPER calls this denominator “2-year post grads”. Our rationale for this ratio is that those who completed a training programs in 2016, “experienced” the reality of the job opportunities in 2017, and were able to find work. Thus, a higher ratio could suggest greater current job availability in a given specialty as compared to a lower ratio that could suggest poorer job availability. For example, general surgery shows a ratio of 0.7 and psychiatry shows a ratio of 3.3 suggesting that within Atlantic Canada it could have been harder to get a job in general surgery compared to psychiatry. Additionally, the general surgery Atlantic ratio was 0.7 compared to 0.4 in Canada suggesting that getting a job in the Atlantic provinces could have been easier compared to the Canadian average.

It is important to note that this ratio contains multiple limitations, is far from accurate, and should not be used as a reliable indicator of workforce demands. First, it works best for specialties that have a higher overall number of physicians and becomes seriously limited for specialties with lower overall number of physicians. This is because the limitations are less diffuse and weigh in more importantly. Second, we noted the limitations of the job vacancies above. Third, we assume that the job availabilities are equally desirable by applicants, and that if an applicant applied they would get the job.

The rationale for using 2 years after practice was to account for physicians who finished their training in the Atlantic provinces and immediately moved out of Atlantic Canada to practice elsewhere, and for those who graduated outside of Atlantic and began their practice in Atlantic Canada. These numbers include permanent residents and Canadian citizens only, and do not include visa trainees.

Canadian vacancies / Canadian physicians 2 years post-grad

This ratio is similar to the one above but extrapolated to the entire nation. It is limited by the fact that it does not account for the “emigration” nor “immigration” of physicians in or out of Canada. It is meant to provide a comparison to the Atlantic ratio.

Atlantic Average Wage:

This is the Atlantic average wage that physicians earned from Medicare as average gross clinical payments for a full-time equivalent physician. Data was collected from the CMA specialty profiles when not available from CIHI, thus explaining why some wage are displayed as Canadian average. The wage number presented is earning before taxes. Here is Canada’s progressive tax brackets in 2019:

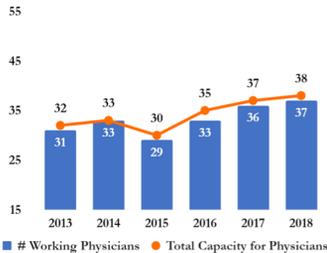
- 15% on the first \$47,630 of taxable income, plus
- 20.5% on the next \$47,629 of taxable income (on the portion of taxable income over 47,630 up to \$95,259), plus
- 26% on the next \$52,408 of taxable income (on the portion of taxable income over \$95,259 up to \$147,667), plus
- 29% on the next \$62,704 of taxable income (on the portion of taxable income over 147,667 up to \$210,371), plus
- 33% of taxable income over \$210,371



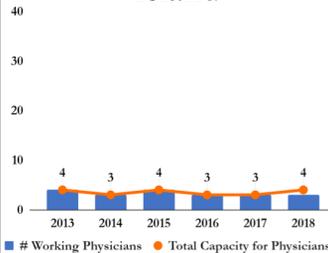
Anatomical Pathology



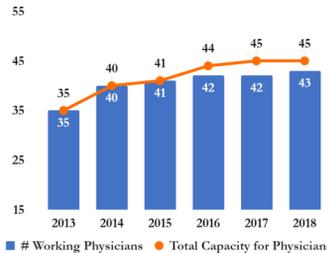
New Brunswick



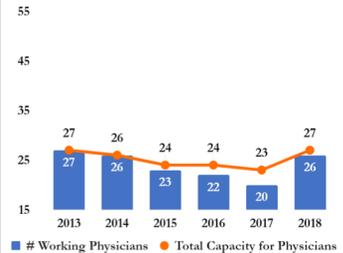
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
16	43.2	3	8.1	1	33.3	0	0	17	39.5	2	4.7	11	42.3	2	7.7
Projected need:				Projected need:				Projected need (total 2016-2025): 19				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n) → 7 & 5

Graduating residents (2013-2018 Canadian average) (n, rounded) → 29.25

Graduating fellows (2013-2018 Canadian average) (n, rounded) → 18.25

Atlantic vacancies in 2017 (n) → 1.2
 2016 graduates who are now working in Atlantic in 2018 (n)

Canadian vacancies in 2017 (n) → 0.6
 2016 graduates who are now working in Canada in 2018 (n)

Atlantic wage (average gross clinical payments) → N/A

Program Director Comments:

(NS) Few truly 'rural' pathology jobs exist – most in community hospitals serving towns >5000 people. Residency competitiveness is not particularly competitive. Recent post-grads don't have difficulty finding work. Approx. 50-70% of AP trainees from Dal will pursue a fellowship.
 (NL) 1-2 positions per year with anticipated retirements and increasing demands on the speciality. There will likely be both urban and rural positions. Additional training following residency would definitely be an asset. Approaching health regions you are considering to determine need would be judicious. All of our recent graduates are employed as pathologists, most of them in the province or are currently completing fellowships and returning to work in the province. Currently the residency is not very competitive.

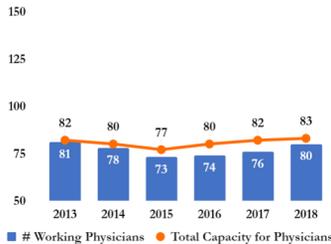
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/anatomical-pathology-e.pdf>
- The Undifferentiated Medical Student podcast #054: <https://www.undifferentiatedmedicalstudent.com/ep-054-anatomic-clinical-pathology-with-dr-leal-herlitz/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967044>

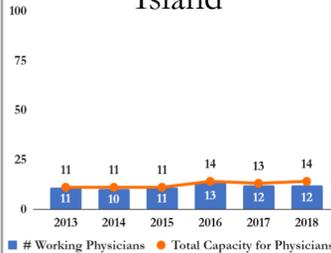
Anesthesiology



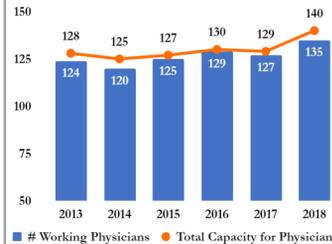
New Brunswick



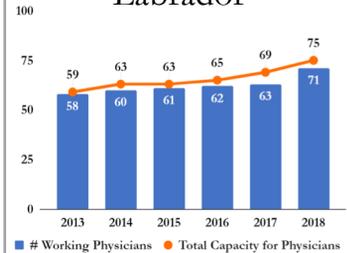
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
34	42.5	14	17.5

50-64y		≥65y	
(n)	(%)	(n)	(%)
9	75	1	8.3

50-64y		≥65y	
(n)	(%)	(n)	(%)
48	35.6	22	16.3

50-64y		≥65y	
(n)	(%)	(n)	(%)
28	39.4	9	12.7

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 37

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



15 & 14

Graduating residents (2013-2018 Canadian average) (n, rounded)



81.5

Graduating fellows (2013-2018 Canadian average) (n, rounded)



62

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



3

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.4

Canadian wage (average gross clinical payments)



\$366,383

Program Director Comments:

(NS) Anesthesia is currently undergoing a national shortage and that is certainly true in NS as well, the forecasts continue this shortage for many years with difficulty in filling positions currently available as well as retirements upcoming. The largest areas of need are outside of academic centres, but there are needs in the major academic centres as well. Typically most academic centre positions require fellowships but not always. Approximately half of graduating residents do fellowships following residency, these are not necessary at all if planning to work in a community centre and no recent residents have had difficulty finding employment, although not necessarily in their first choice of institution. Residency positions have become increasingly competitive in recent years but most applicants whose first choice is anesthesia will match somewhere if they are applying across the country. (NL) see appendix 1 for a similar answer from the Program Director at Memorial University

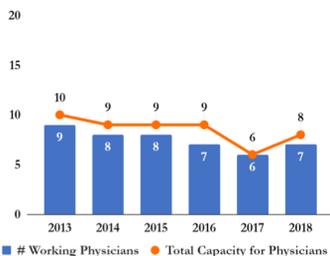
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/anesthesiology-e.pdf>
- The Undifferentiated Medical Student podcast #034: <https://www.undifferentiatedmedicalstudent.com/ep-034-anesthesiology-with-dr-daniel-lee/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967037>

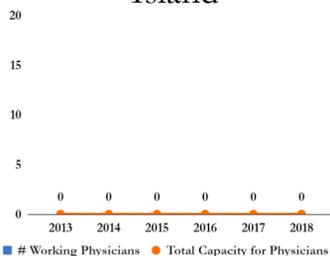
Cardiac Surgery



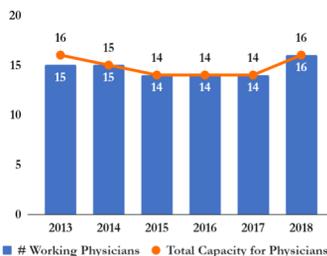
New Brunswick



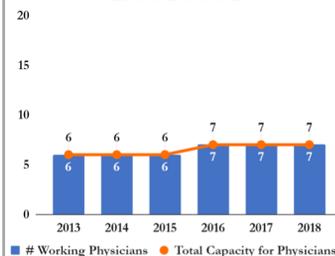
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
3	42.9	1	14.3	0	0	0	0	5	31.3	3	18.8	1	14.3	1	14.3
Projected need:				Projected need:				Projected need (total 2016-2025): 5				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)



0 & 1

Graduating residents (2013-2018 Canadian average) (n, rounded)



4.75

Graduating fellows (2013-2018 Canadian average) (n, rounded)



5

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



0/1

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.4

Atlantic wage (average gross clinical payments)



\$573,170

Program Director Comments:

If you forecast your discipline to have many jobs opportunities in 10 years: in NS 5 cardiac surgery jobs over next 10 years
 Need for urban vs rural physicians: all urban
 Comment on % pursuing training following residency (and if this is to secure work): 100% - yes
 If recent post-grads having difficulty finding work: yes
 Residency competitiveness: moderate

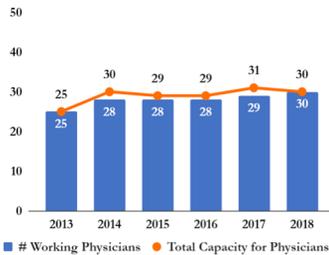
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/cardiothoracic-surgery-e.pdf>
- The Undifferentiated Medical Student podcast #013: <https://www.undifferentiatedmedicalstudent.com/ep-013-cardiothoracic-surgery-with-dr-mimi-ceppala/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967106>

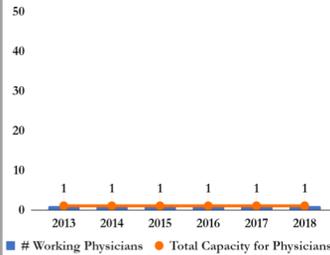
Cardiology



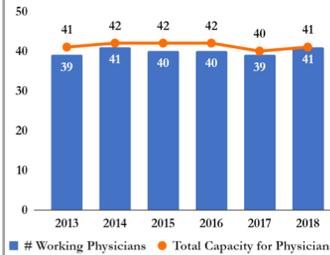
New Brunswick



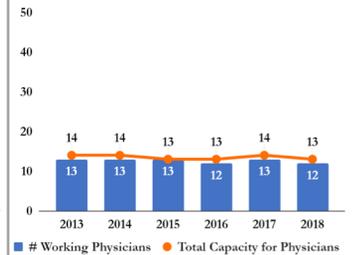
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
17	56.7	3	10	0	0	1	100	14	34.1	4	9.8	6	50	2	16.7
Projected need:				Projected need:				Projected need (total 2016-2025): 18				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n) → 4 & 1

Graduating residents (2013-2018 Canadian average) (n, rounded) → 29.75

Graduating fellows (2013-2018 Canadian average) (n, rounded) → 37.75

$\frac{\text{Atlantic vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Atlantic in 2018 (n)}} \rightarrow 1.3$

$\frac{\text{Canadian vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Canada in 2018 (n)}} \rightarrow 0.4$

Atlantic wage (average gross clinical payments) → \$441,843

Program Director Comments:

N/A

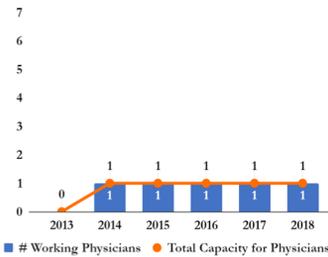
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/cardiology-e.pdf>
- The Undifferentiated Medical Student podcast #019: <https://www.undifferentiatedmedicalstudent.com/ep-019-cardiology-with-dr-richard-josephson/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967119>

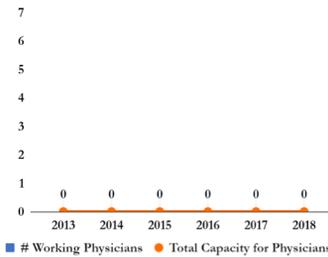
Clinical Immunology and Allergy



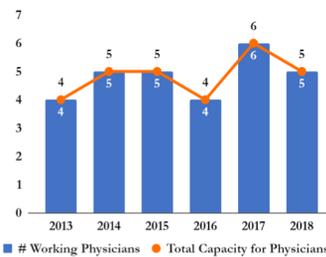
New Brunswick



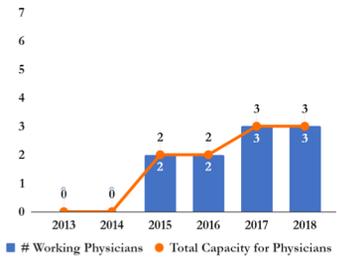
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y													
(n)	(%)	(n)	(%)												
1	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Projected need:				Projected need:				Projected need:				Projected need:			
N/A				N/A				N/A				N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	0 & 0
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	5.25
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	0.5
<u>Atlantic vacancies in 2017 (n)</u>	➔	0/1
<u>2016 graduates who are now working in Atlantic in 2018 (n)</u>		
<u>Canadian vacancies in 2017 (n)</u>	➔	1.1
<u>2016 graduates who are now working in Canada in 2018 (n)</u>		
Atlantic wage (average gross clinical payments)	➔	\$410,677.50

Program Director Comments:

N/A

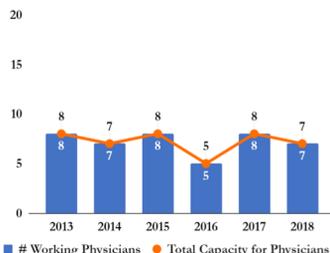
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/immunology-allergy-e.pdf>
- The Undifferentiated Medical Student podcast #035: <https://www.undifferentiatedmedicalstudent.com/ep-035-allergy-immunology-with-dr-haig-tcheurekdjian/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967112>

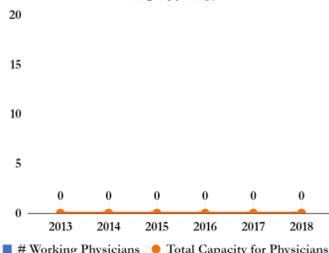
Critical Care Medicine



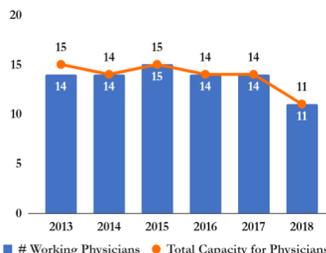
New Brunswick



Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
2	28.6	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
0	0	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
2	18.2	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
3	60	0	0

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 2

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



0 & 1

Graduating residents (2013-2018 Canadian average) (n, rounded)



28

Graduating fellows (2013-2018 Canadian average) (n, rounded)



5

Atlantic vacancies in 2017 (n)



0/0

2016 graduates who are now working in Atlantic in 2018 (n)

Canadian vacancies in 2017 (n)



0.1

2016 graduates who are now working in Canada in 2018 (n)

Canadian wage (average gross clinical payments)



\$350,629

Program Director Comments:

N/A

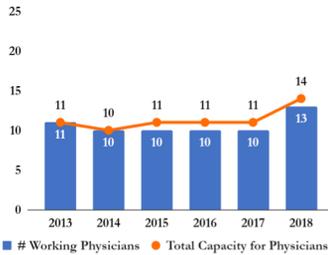
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/critical-care-e.pdf>
- The Undifferentiated Medical Student podcast #043 (also #010 and #042): <https://www.undifferentiatedmedicalstudent.com/ep-043-critical-care-medicine-via-internal-medicine-with-dr-rozy-khan/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967052>

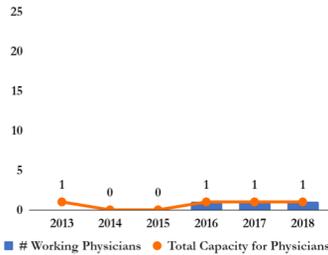
Dermatology



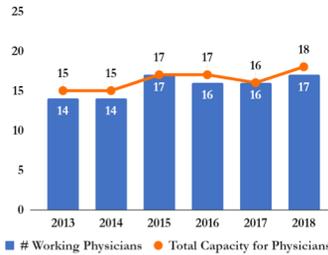
New Brunswick



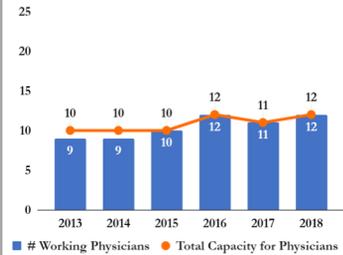
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
5	38.5	2	15.4	0	0	0	0	9	52.9	2	11.8	5	41.7	0	0
Projected need:				Projected need:				Projected need (total 2016-2025): 10				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	1 & 2
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	28.5
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	5.25
<u>Atlantic vacancies in 2017 (n)</u>	➔	1/0
<u>2016 graduates who are now working in Atlantic in 2018 (n)</u>	➔	
<u>Canadian vacancies in 2017 (n)</u>	➔	3.4
<u>2016 graduates who are now working in Canada in 2018 (n)</u>	➔	
Atlantic wage (average gross clinical payments)	➔	\$549,951

Program Director Comments:

N/A

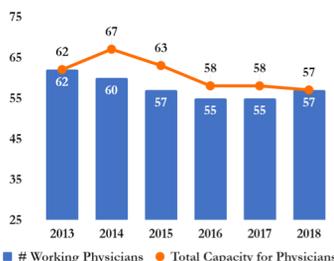
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/pdf/Physician%20Data/dermatology-e-v2.pdf>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967085>

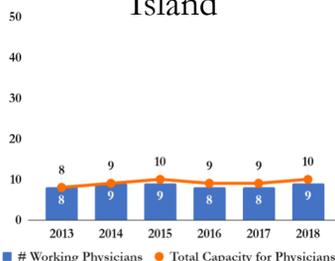
Diagnostic Radiology



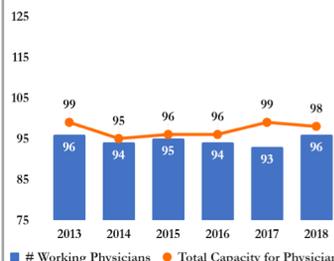
New Brunswick



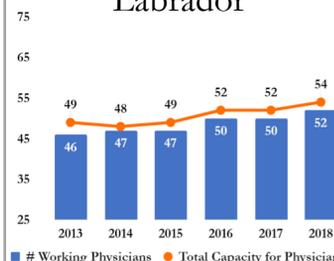
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
20	35.1	8	14	2	22.2	0	0	36	37.5	13	13.5	16	30.8	5	9.6
Projected need:				Projected need:				Projected need (total 2016-2025): 25				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	12 & 5
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	50.25
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	55.5
Atlantic vacancies in 2017 (n)		
<u>2016 graduates who are now working in Atlantic in 2018 (n)</u>	➔	2.4
Canadian vacancies in 2017 (n)		
<u>2016 graduates who are now working in Canada in 2018 (n)</u>	➔	0.6
Canadian wage (average gross clinical payments)	➔	\$350, 629

Program Director Comments:

(NB) For Dalhousie, really PEI, NB and NS, we forecast the need for about 10-12 Radiologists in Halifax over the next 10 years, with probably 10 more needed for the rest of province in that same time period. There would be a need for about another 5-8 in NB and PEI. This is a breakdown for about 50/50 between urban and rural locations. The Residency is competitive in the sense that each program has an application pool 10-20 times the actual number of positions. Radiologists benefit from Fellowship training, and many of or Residents go on to a rural or general practice after their Fellowship. However, we find that applicants who are serious and truly interested in Radiology, all match to a program somewhere.

Helpful Resources:

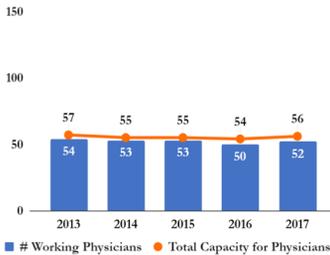
- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/diagnostic-radiology-e.pdf>
- The Undifferentiated Medical Student podcast #015: <https://www.undifferentiatedmedicalstudent.com/ep-015-diagnostic-radiology-with-dr-james-lieberman/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967079>

Emergency Medicine

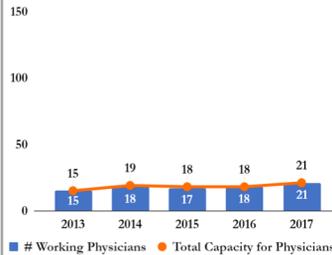
(data includes 5-year ER + family medicine with R3 in ER with no 2018 data due to inaccuracy)



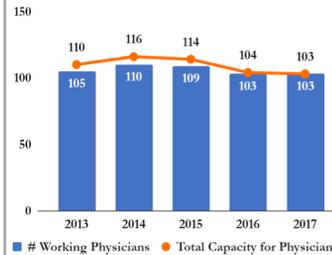
New Brunswick



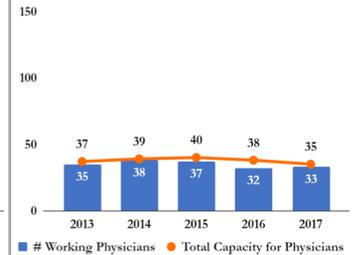
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
22	42.3	2	3.8

50-64y		≥65y	
(n)	(%)	(n)	(%)
6	28.6	2	9.5

50-64y		≥65y	
(n)	(%)	(n)	(%)
31	30.1	5	4.9

50-64y		≥65y	
(n)	(%)	(n)	(%)
2	6.1	1	3

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 49

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



6 & 8

Graduating residents (2013-2018 Canadian average) (n, rounded)



61

Graduating fellows (2013-2018 Canadian average) (n, rounded)



2.75

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



0.5

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.6

Canadian wage (average gross clinical payments)



\$350,629

Program Director Comments:

N/A

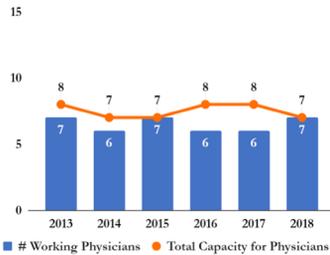
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/emergency-e.pdf>
- The Undifferentiated Medical Student podcast #007: <https://www.undifferentiatedmedicalstudent.com/ep-007-emergency-medicine-with-dr-thomas-brantley/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967050>

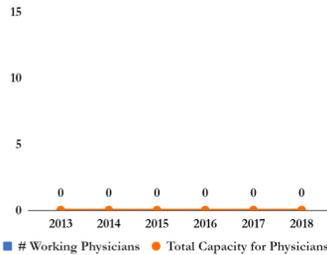
Endocrinology



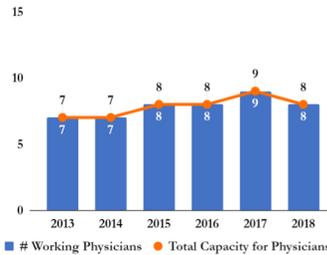
New Brunswick



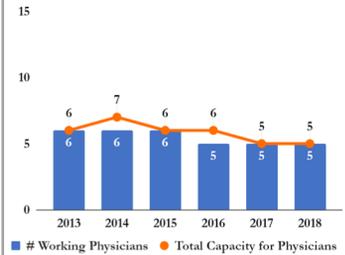
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y					
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)				
1	14.3	1	14.3	0	0	0	0	3	37.5	0	0				
Projected need:				Projected need:				Projected need (total 2016-2025): 4				Projected need:			
N/A				N/A				N/A				N/A			

Atlantic vacancies in 2017 & 2018 (n)



2 & 0

Graduating residents (2013-2018 Canadian average) (n, rounded)



26

Graduating fellows (2013-2018 Canadian average) (n, rounded)



4.25

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



2

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.6

Canadian wage (average gross clinical payments)



\$407,224

Program Director Comments:

N/A

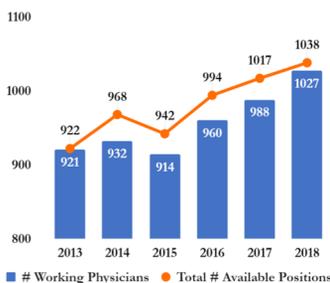
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/endocrinology-metabolism-e.pdf>
- The Undifferentiated Medical Student podcast #026: <https://www.undifferentiatedmedicalstudent.com/ep-026-endocrinology-diabetes-metabolism-with-dr-nadine-el-asmar/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967098>

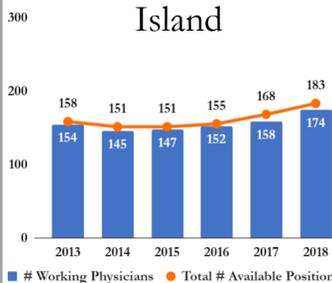
Family Medicine



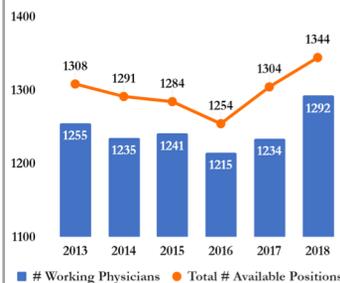
New Brunswick



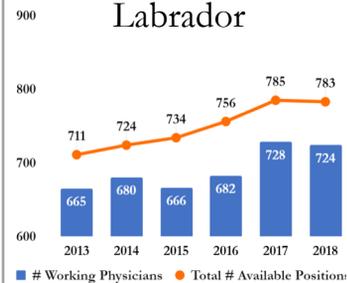
Prince-Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
356	34.7	165	16.1	58	33.3	25	14.4	501	38.8	216	16.7	203	28	95	13.1
Projected need:				Projected need:				Projected need (total 2016-2025): 512				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	166 & 131
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	1162.5
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	13
Atlantic vacancies in 2017 (n)		
$\frac{2016 \text{ graduates who are now working in Atlantic in 2018 (n)}}{\text{Atlantic vacancies in 2017 (n)}}$	➔	1.8
Canadian vacancies in 2017 (n)		
$\frac{2016 \text{ graduates who are now working in Canada in 2018 (n)}}{\text{Canadian vacancies in 2017 (n)}}$	➔	1.8
Atlantic wage (average gross clinical payments)	➔	\$304,828

Program Director Comments:

(NL) Family Medicine at Memorial University is a two-year program offering training in urban, rural and remote locations across Newfoundland and Labrador, New Brunswick and Nunavut. Each year there are a number of job opportunities available in our urban, rural and remote communities.

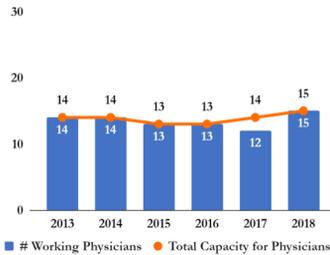
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/family-e.pdf>
- The Undifferentiated Medical Student podcast #016: <https://www.undifferentiatedmedicalstudent.com/ep-016-family-medicine-with-dr-steve-brown/>
- College of Family Physicians: <https://www.cfpc.ca/Home/>

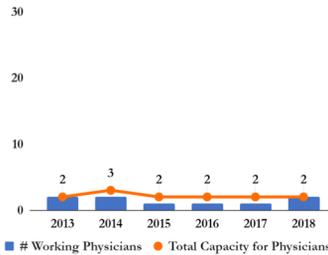
Gastroenterology



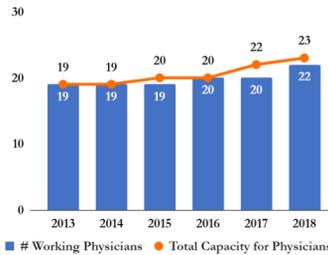
New Brunswick



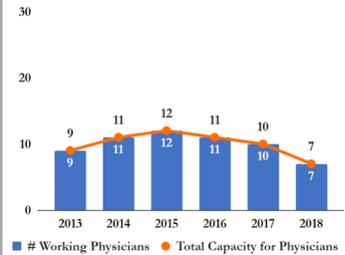
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
2	13.3	2	13.3	0	0	1	50	6	27.3	2	9.1	3	42.9	0	0
Projected need:				Projected need:				Projected need (total 2016-2025): 6				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	5 & 2
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	26.5
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	18
<u>Atlantic vacancies in 2017 (n)</u>	➔	5.0
<u>2016 graduates who are now working in Atlantic in 2018 (n)</u>	➔	
<u>Canadian vacancies in 2017 (n)</u>	➔	0.5
<u>2016 graduates who are now working in Canada in 2018 (n)</u>	➔	
Atlantic wage (average gross clinical payments)	➔	\$439,405

Program Director Comments:

N/A

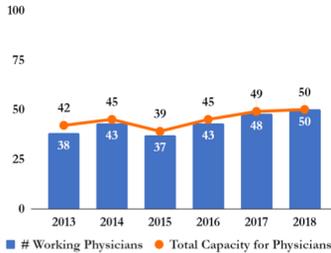
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/gastronenterology-e.pdf>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967115>

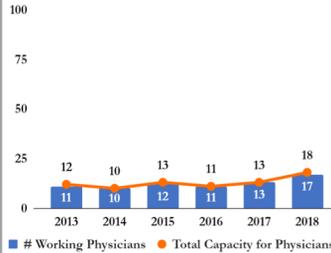
General Internal Medicine



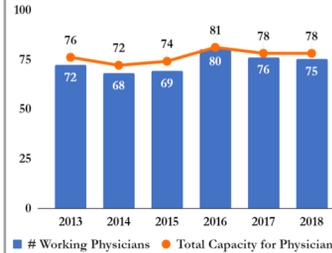
New Brunswick



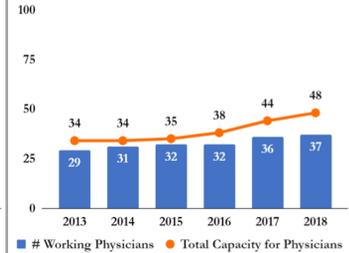
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
15	30	8	16

50-64y		≥65y	
(n)	(%)	(n)	(%)
7	41.2	3	17.6

50-64y		≥65y	
(n)	(%)	(n)	(%)
26	34.7	16	21.3

50-64y		≥65y	
(n)	(%)	(n)	(%)
18	48.6	13	35.1

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 34

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



11 & 14

Graduating residents (2013-2018 Canadian average) (n, rounded)



73

Graduating fellows (2013-2018 Canadian average) (n, rounded)



14

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



1.4

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



1.3

Atlantic wage (average gross clinical payments)



\$410,678

Program Director Comments:

(NS) Especially in Nova Scotia, rural general internists are needed more than urban general internists. None of our recent post-grads have had trouble finding work. Within the last 6 years at least, everyone has found a job. Residency competitiveness is variable based on year. GIM is a larger subspecialty program at Dalhousie, so we have more spots.

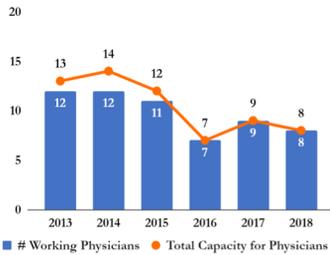
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/internal-medicine-e.pdf>
- The Undifferentiated Medical Student podcast #001: <https://www.undifferentiatedmedicalstudent.com/ep-001-internal-medicine-with-dr-bryan-hambley/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967104>

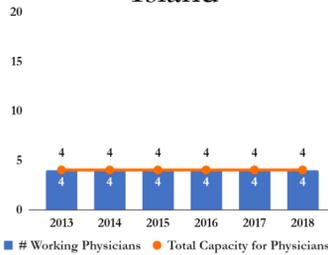
General Pathology



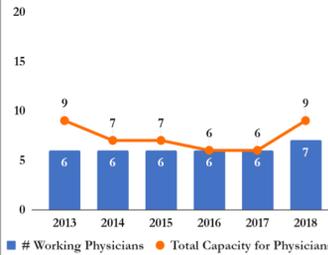
New Brunswick



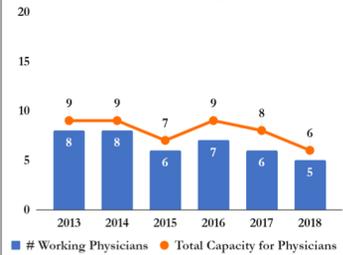
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
6	75	0	0	2	50	0	0	1	14.3	1	14.3	3	60	1	20
Projected need:				Projected need:				Projected need (total 2016-2025): 2				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	2 & 3
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	3.25
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	2.25
<u>Atlantic vacancies in 2017 (n)</u>	➔	N/A
<u>2016 graduates who are now working in Atlantic in 2018 (n)</u>	➔	N/A
<u>Canadian vacancies in 2017 (n)</u>	➔	0.9
<u>2016 graduates who are now working in Canada in 2018 (n)</u>	➔	0.9
Atlantic wage (average gross clinical payments)	➔	N/A

Program Director Comments:

N/A

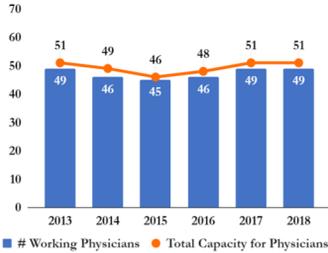
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/general-pathology-e.pdf>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967047>

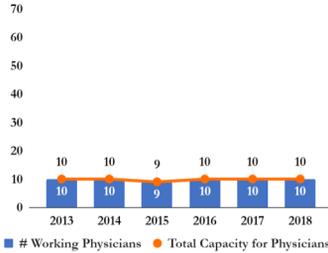
General Surgery



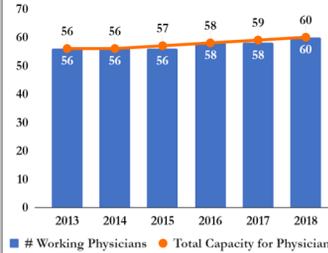
New Brunswick



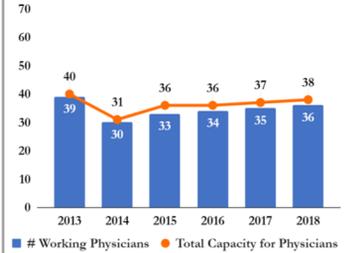
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
16	32.7	8	16.3	3	30	4	40	20	33.3	13	21.7	17	47.2	9	25
Projected need:				Projected need:				Projected need (total 2016-2025): 24				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)



5 & 5

Graduating residents (2013-2018 Canadian average) (n, rounded)



58.5

Graduating fellows (2013-2018 Canadian average) (n, rounded)



31.5

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



0.7

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.4

Atlantic wage (average gross clinical payments)



\$497,505

Program Director Comments:

(NL) Over the last several years about half of our graduates have done sub-specialty training. General surgery has become competitive. In the last 4 years all of our positions have been filled in the first round of the Carms match.

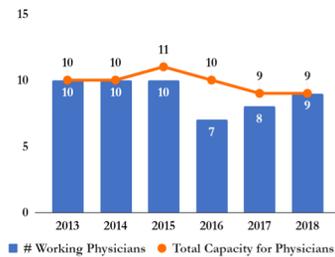
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/general-surgery-e.pdf>
- The Undifferentiated Medical Student podcast #002: <https://www.undifferentiatedmedicalstudent.com/ep-002-general-surgery-with-dr-jeffrey-hardacre/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967081>

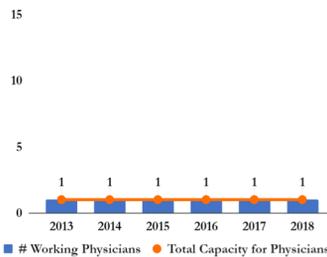
Geriatrics



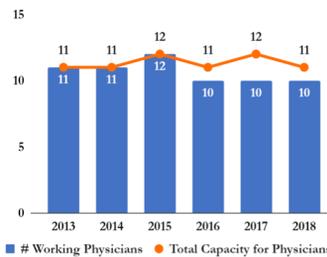
New Brunswick



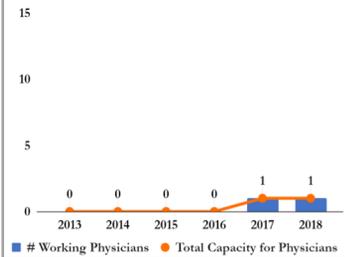
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
2	22.2	0	0	0	0	0	0	7	70	0	0	0	0	0	0
Projected need:				Projected need:				Projected need (total 2016-2025): 6				Projected need:			
N/A				N/A				N/A				N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	3 & 1
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	20.5
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	1
$\frac{\text{Atlantic vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Atlantic in 2018 (n)}}$	➔	1.5
$\frac{\text{Canadian vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Canada in 2018 (n)}}$	➔	3.3
Atlantic wage (average gross clinical payments)	➔	\$403,485

Program Director Comments:

N/A

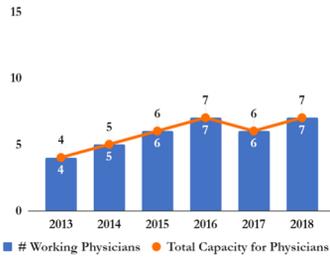
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/geriatric-e.pdf>
- The Undifferentiated Medical Student podcast #041: <https://www.undifferentiatedmedicalstudent.com/ep-041-geriatric-medicine-with-dr-brett-porter/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967049>

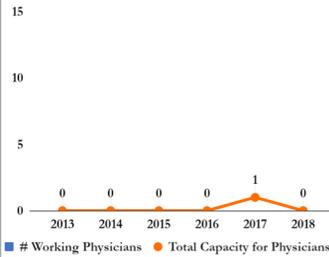
Hematology



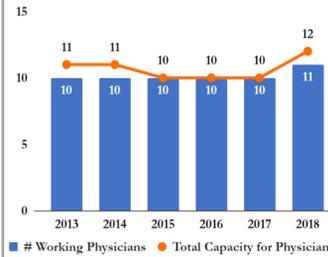
New Brunswick



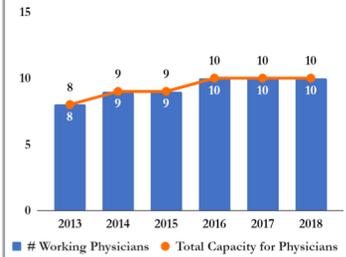
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
1	14.3	1	14.3	0	0	0	0	3	27.3	2	18.2	2	20	1	10
Projected need:				Projected need:				Projected need (total 2016-2025): 5				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)



1 & 1

Graduating residents (2013-2018 Canadian average) (n, rounded)



17

Graduating fellows (2013-2018 Canadian average) (n, rounded)



9.75

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



1.0

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.6

Canadian wage (average gross clinical payments)



\$407,224

Program Director Comments:

N/A

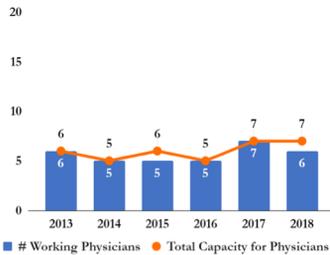
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/hematology-e.pdf>
- The Undifferentiated Medical Student podcast #027: <https://www.undifferentiatedmedicalstudent.com/ep-027-hematology-oncology-with-dr-shadia-jalal/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967058>

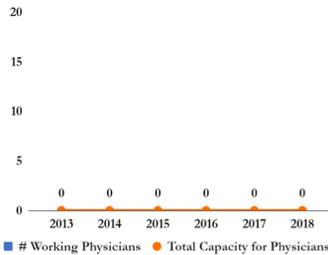
Infectious Disease



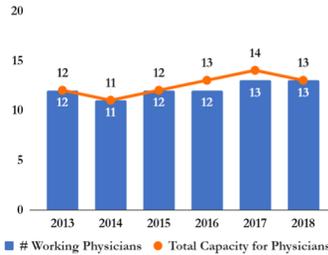
New Brunswick



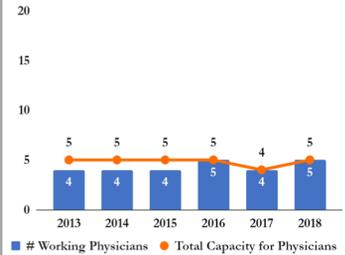
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
1	16.7	0	0	0	0	0	0	2	15.4	2	15.4	0	0	0	0
Projected need:				Projected need:				Projected need (total 2016-2025): 3				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)



1 & 1

Graduating residents (2013-2018 Canadian average) (n, rounded)



17

Graduating fellows (2013-2018 Canadian average) (n, rounded)



2.25

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



1.0

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.4

Canadian wage (average gross clinical payments)



\$407,224

Program Director Comments:

N/A

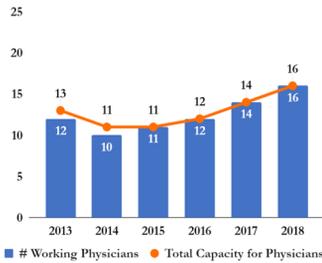
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/medical-microbiology-e.pdf>
- The Undifferentiated Medical Student podcast #014: <https://www.undifferentiatedmedicalstudent.com/ep-014-infectious-diseases-with-dr-robert-kalayjian/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967101>

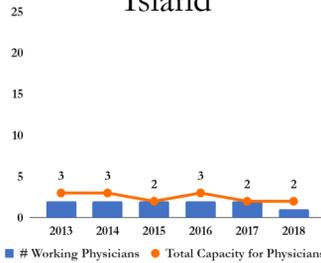
Medical Oncology



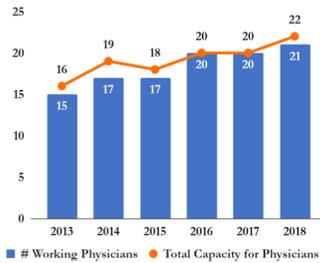
New Brunswick



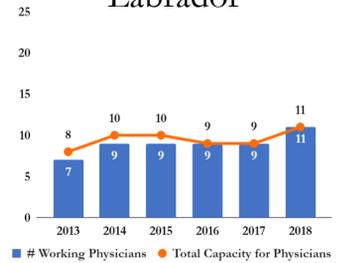
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
5	31.3	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
1	100	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
8	38.1	2	9.5

50-64y		≥65y	
(n)	(%)	(n)	(%)
1	9.1	0	0

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 8

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



0 & 2

Graduating residents (2013-2018 Canadian average) (n, rounded)



23.5

Graduating fellows (2013-2018 Canadian average) (n, rounded)



15

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



0/4

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.1

Atlantic wage (average gross clinical payments)



\$407,224

Program Director Comments:

N/A

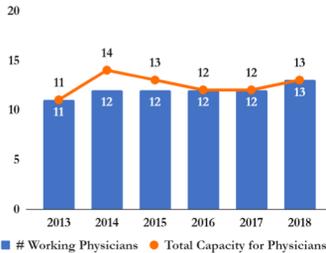
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/medical-oncology-e.pdf>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967080>

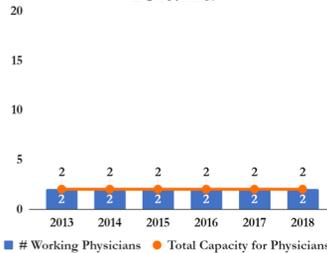
Nephrology



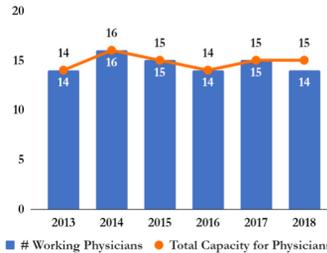
New Brunswick



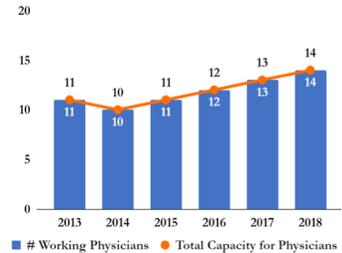
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
4	30.8	0	0	1	50	0	0	7	50	1	7.1	6	42.9	0	0
Projected need:				Projected need:				Projected need (total 2016-2025): 13				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	0 & 1
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	16
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	15
Atlantic vacancies in 2017 (n)	➔	0/3
2016 graduates who are now working in Atlantic in 2018 (n)	➔	0/3
Canadian vacancies in 2017 (n)	➔	0.8
2016 graduates who are now working in Canada in 2018 (n)	➔	0.8
Canadian wage (average gross clinical payments)	➔	\$407,224

Program Director Comments:

(NL) nephrology is primarily a “sort-of” urban specialty but there are times that job opportunities arise in smaller towns. Currently 8 working nephrologists (with 2 retired in last couple of years & 2 new replacement hires). Of the 8 it is likely that 1 or 2 will retire within the next 5-7 years. About half have gone on to do more training, but usually to pursue work opportunities in Academic centers. <https://www.csnsn.ca/about/careers>

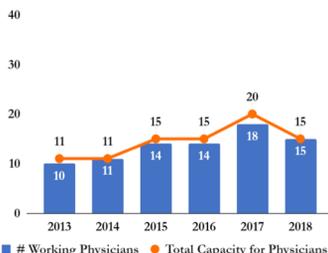
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/nephrology-e.pdf>
- The Undifferentiated Medical Student podcast #048: <https://www.undifferentiatedmedicalstudent.com/ep-048-nephrology-with-dr-josh-augustine/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967099>

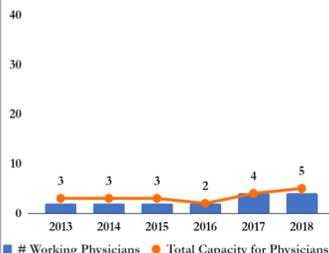
Neurology



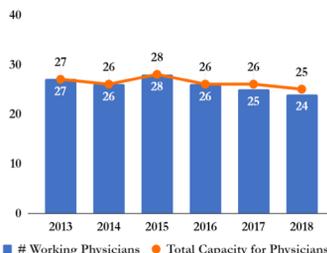
New Brunswick



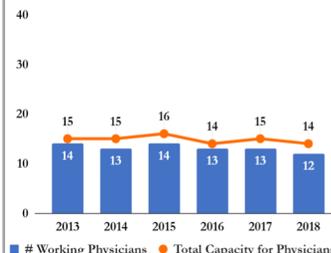
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
6	40	1	6.7

50-64y		≥65y	
(n)	(%)	(n)	(%)
0	0	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
12	50	9	37.5

50-64y		≥65y	
(n)	(%)	(n)	(%)
6	50	3	25

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 15

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n) → 5 & 4

Graduating residents (2013-2018 Canadian average) (n, rounded) → 30

Graduating fellows (2013-2018 Canadian average) (n, rounded) → 26.5

Atlantic vacancies in 2017 (n) → 5
 $\frac{2016 \text{ graduates who are now working in Atlantic in 2018 (n)}}{2016 \text{ graduates who are now working in Atlantic in 2018 (n)}} \rightarrow 2.5$

Canadian vacancies in 2017 (n) → 5
 $\frac{2016 \text{ graduates who are now working in Canada in 2018 (n)}}{2016 \text{ graduates who are now working in Canada in 2018 (n)}} \rightarrow 0.9$

Atlantic wage (average gross clinical payments) → \$323,609

Program Director Comments:

(NS) Our group definitely feels that there will be a need for more neurologists in Nova Scotia in the next few decades, especially as our population continues to age. Neurology is not, generally speaking, a rural specialty, as we need access to neurodiagnostic testing and neuroimaging. Several of our group do travelling clinics in smaller centers. About 50 - 75% of our graduating Residents go on to some level of sub-specialty fellowship training. The Residency is fairly competitive - in the past few years, we have had over 50 applicants / year; we interview 36

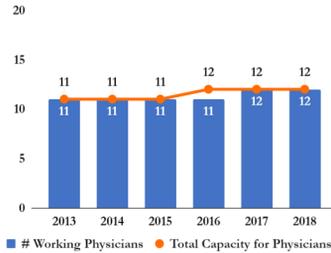
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/neurology-e.pdf>
- The Undifferentiated Medical Student podcast #005: <https://www.undifferentiatedmedicalstudent.com/ep-005-neurology-with-dr-donald-mann/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967107>

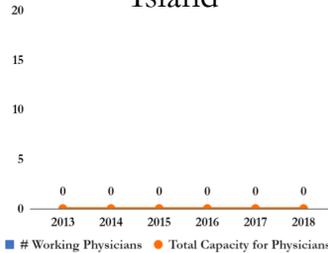
Neurosurgery



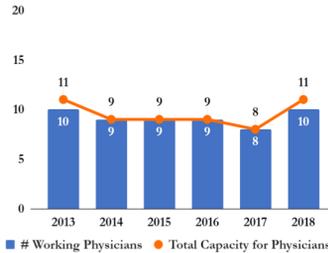
New Brunswick



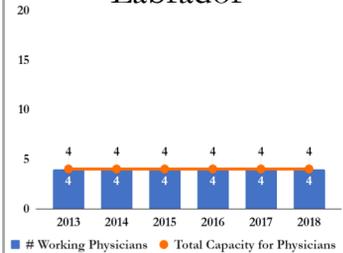
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
3	25	4	33.3

50-64y		≥65y	
(n)	(%)	(n)	(%)
0	0	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
2	20	1	10

50-64y		≥65y	
(n)	(%)	(n)	(%)
1	25	1	25

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 1

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



0 & 1

Graduating residents (2013-2018 Canadian average) (n, rounded)



14

Graduating fellows (2013-2018 Canadian average) (n, rounded)



7.75

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



0/2

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.2

Atlantic wage (average gross clinical payments)



\$448,622.67

Program Director Comments:

N/A

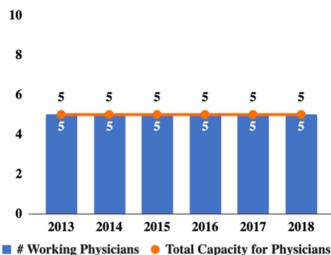
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/neurosurgery-e.pdf>
- The Undifferentiated Medical Student podcast #003: <https://www.undifferentiatedmedicalstudent.com/ep-003-neurosurgery-with-dr-jennifer-sweet/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967067>

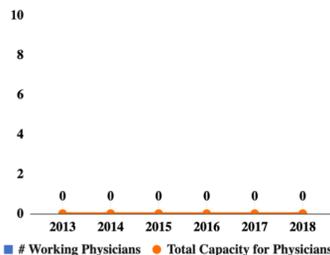
Nuclear Medicine



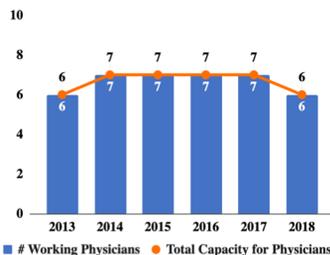
New Brunswick



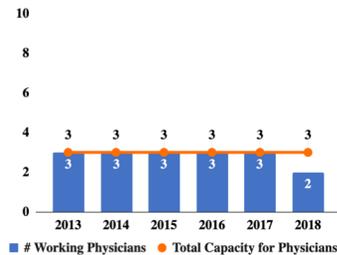
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
3	60	1	20	0	0	0	0	3	50	0	0	1	50	0	0
Projected need:				Projected need:				Projected need				Projected need:			
N/A				N/A				(2016-2015): 3				N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	0 & 1
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	8
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	0.75
$\frac{\text{Atlantic vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Atlantic in 2018 (n)}}$	➔	0/0
$\frac{\text{Canadian vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Canada in 2018 (n)}}$	➔	1.0
Atlantic wage (average gross clinical payments)	➔	\$350,629

Program Director Comments:

N/A

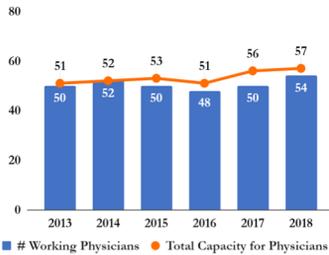
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/nuclear-e.pdf>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967057>

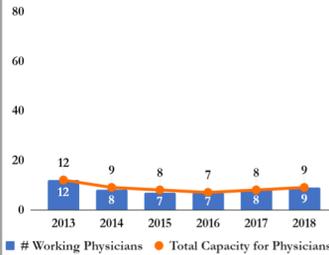
Obstetrics and Gynecology



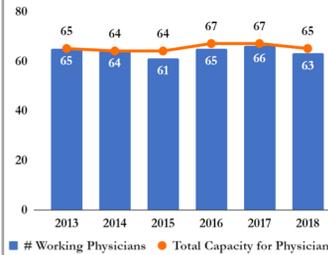
New Brunswick



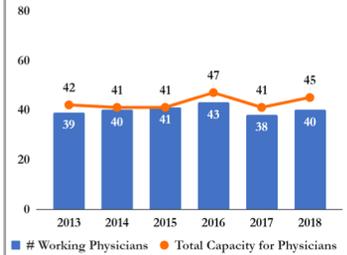
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y													
(n)	(%)	(n)	(%)												
17	31.5	6	11.1	2	22.2	2	22.2	24	38.1	13	20.6	13	32.5	5	12.5

Projected need: N/A	Projected need: N/A	Projected need (total 2016-2025): 22	Projected need: N/A
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Atlantic vacancies in 2017 & 2018 (n)	➔	10 & 10
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	69.25
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	14.75
$\frac{\text{Atlantic vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Atlantic in 2018 (n)}}$	➔	3.3
$\frac{\text{Canadian vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Canada in 2018 (n)}}$	➔	0.4
Atlantic wage (average gross clinical payments)	➔	\$463,520

Program Director Comments:

N/A

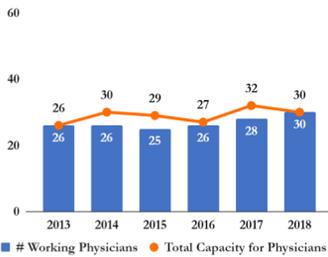
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/obgyn-e.pdf>
- The Undifferentiated Medical Student podcast #009: <https://www.undifferentiatedmedicalstudent.com/ep-009-obgyn-with-dr-marjorie-greenfield/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967102>

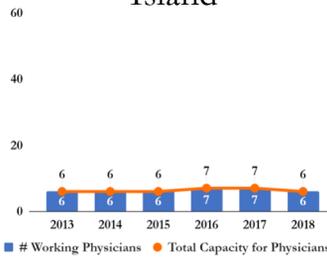
Ophthalmology



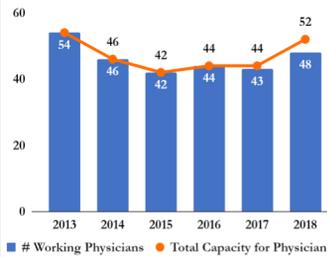
New Brunswick



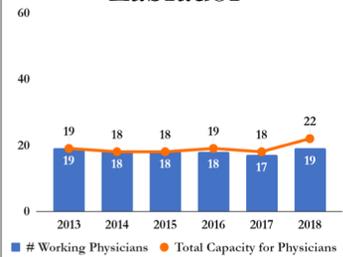
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
11	36.7	7	23.3

50-64y		≥65y	
(n)	(%)	(n)	(%)
2	33.3	3	50

50-64y		≥65y	
(n)	(%)	(n)	(%)
9	18.8	11	22.9

50-64y		≥65y	
(n)	(%)	(n)	(%)
8	42.1	5	26.3

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 17

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



6 & 7

Graduating residents (2013-2018 Canadian average) (n, rounded)



30.75

Graduating fellows (2013-2018 Canadian average) (n, rounded)



13.25

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



3.0

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.6

Atlantic wage (average gross clinical payments)



\$944,235.25

Program Director Comments:

N/A

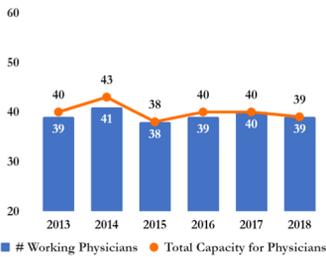
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/ophthalmology-e.pdf>
- The Undifferentiated Medical Student podcast #070: <https://www.undifferentiatedmedicalstudent.com/ep-070-ophthalmology-with-dr-tamar-shafran/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967083>

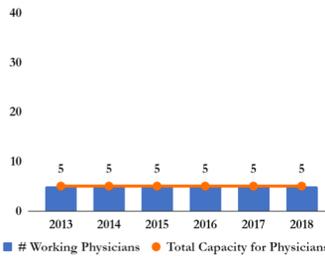
Orthopedic Surgery



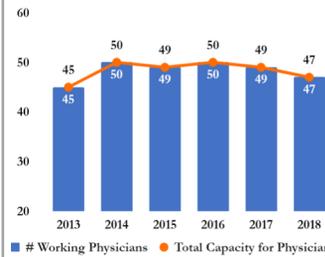
New Brunswick



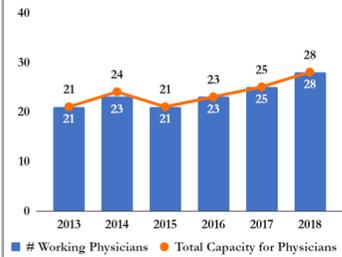
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
19	48.7	1	2.6	2	40	0	0	18	38.3	5	10.6	13	46.4	1	3.6
Projected need:				Projected need:				Projected need (total 2016-2025): 17				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)



0 & 0

Graduating residents (2013-2018 Canadian average) (n, rounded)



33.75

Graduating fellows (2013-2018 Canadian average) (n, rounded)



63.5

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



0/5

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.2

Canadian wage (average gross clinical payments)



\$403,855

Program Director Comments:

N/A

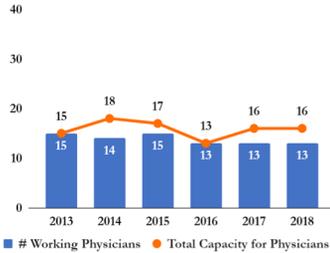
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/orthopedic-surgery-e.pdf>
- The Undifferentiated Medical Student podcast #033: <https://www.undifferentiatedmedicalstudent.com/ep-033-orthopedic-surgery-with-dr-serena-hu/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967074>

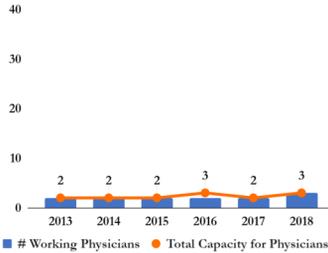
Otolaryngology



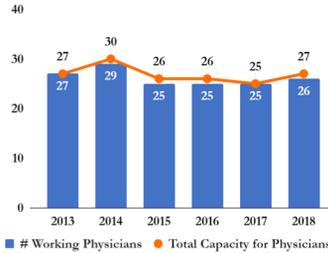
New Brunswick



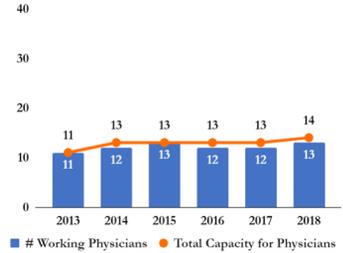
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
4	30.8	1	7.7

50-64y		≥65y	
(n)	(%)	(n)	(%)
0	0	1	33.3

50-64y		≥65y	
(n)	(%)	(n)	(%)
13	50	5	19.2

50-64y		≥65y	
(n)	(%)	(n)	(%)
7	53.8	1	7.7

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 8

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



4 & 5

Graduating residents (2013-2018 Canadian average) (n, rounded)



25

Graduating fellows (2013-2018 Canadian average) (n, rounded)



11.5

Atlantic vacancies in 2017 (n)



1.3

2016 graduates who are now working in Atlantic in 2018 (n)

Canadian vacancies in 2017 (n)



0.5

2016 graduates who are now working in Canada in 2018 (n)

Atlantic wage (average gross clinical payments)



\$503,052

Program Director Comments:

(NS) We are the only training program for the Atlantic Provinces. I expect that there will be jobs probably about equal to the number of candidates we are training. There is likely a need for about 30% of practitioners to be in urban centres/academic centres and about 70% to be in “regional centres” (ie regional hospitals) in groups of 2-5 surgeons. Approximately 60% of residents pursue fellowship training. All of our recent graduates are fully employed. Some would have “preferred” a job in a slightly different location, but all have very good jobs.

Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/otolaryngology-e.pdf>
- The Undifferentiated Medical Student podcast #023: <https://www.undifferentiatedmedicalstudent.com/ep-023-otolaryngology-with-dr-nicole-maronian/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967116>

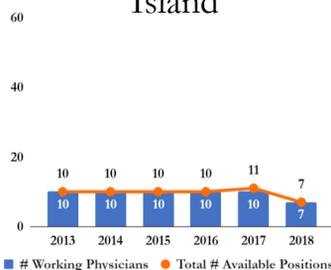
Pediatrics



New Brunswick



Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
15	46.9	9	28.1	5	71.4	2	28.6	43	57.3	28	37.3	23	54.8	11	26.2
Projected need:				Projected need:				Projected need (total 2016-2025): 19				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	13 & 13
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	78.5
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	11.5
Atlantic vacancies in 2017 (n)	➔	1.3
<u>2016 graduates who are now working in Atlantic in 2018 (n)</u>	➔	1.3
Canadian vacancies in 2017 (n)	➔	1.7
<u>2016 graduates who are now working in Canada in 2018 (n)</u>	➔	1.7
Atlantic wage (average gross clinical payments)	➔	\$359,224

Program Director Comments:

N/A

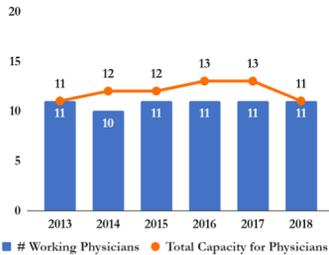
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/pediatrics-e.pdf>
- Podcasts on a wide variety of common pediatric cases: <https://www.pedscases.com/>
- The Undifferentiated Medical Student podcast #031: <https://www.undifferentiatedmedicalstudent.com/ep-031-pediatrics-with-dr-vasudha-bhavaraju/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967072>

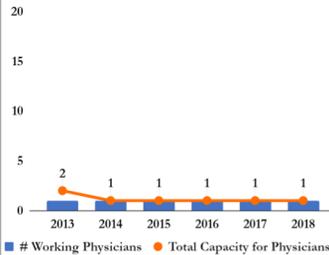
Physiatry and Rehabilitative Medicine



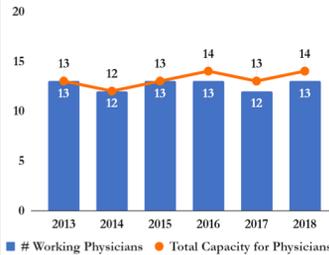
New Brunswick



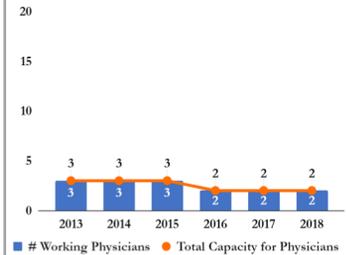
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
5	45.5	0	0	1	100	0	0	4	30.8	3	23.1	1	50	1	50
Projected need:				Projected need:				Projected need (total 2016-2025): 9				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)



3 & 1

Graduating residents (2013-2018 Canadian average) (n, rounded)



23

Graduating fellows (2013-2018 Canadian average) (n, rounded)



4.45

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



3.0

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



1.4

Canadian wage (average gross clinical payments)



\$287,238

Program Director Comments:

N/A

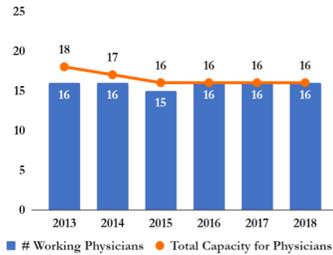
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/physical-med-rehab-e.pdf>
- The Undifferentiated Medical Student podcast #065: <https://www.undifferentiatedmedicalstudent.com/ep-065-physical-medicine-rehabilitation-with-dr-miguel-escalon/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967109>

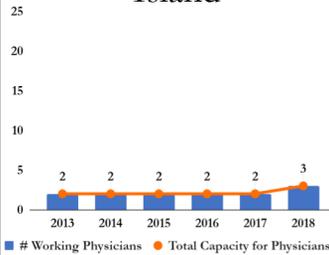
Plastic Surgery



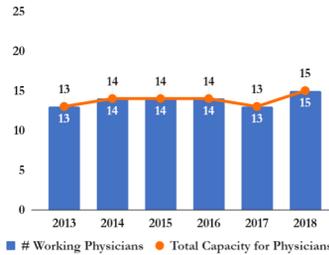
New Brunswick



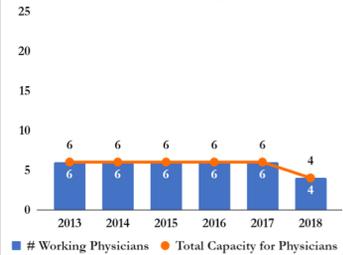
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		65y	
(n)	(%)	(n)	(%)
6	37.5	3	18.8

50-64y		≥65y	
(n)	(%)	(n)	(%)
1	33.3	1	33.3

50-64y		≥65y	
(n)	(%)	(n)	(%)
7	46.7	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
3	75	0	0

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 8

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



0 & 0

Graduating residents (2013-2018 Canadian average) (n, rounded)



21

Graduating fellows (2013-2018 Canadian average) (n, rounded)



9.25

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



0/1

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



1.0

Atlantic wage (average gross clinical payments) (PEI not included)



\$448,622.67

Program Director Comments:

(NS) Plastic Surgery is an extremely competitive program to match to through CaRMS. More specific to Dalhousie University (which is the only training program in Atlantic Canada), we receive approximately 45-55 applications each year for 1-2 positions. Almost all graduating residents go on to further fellowship training in order to pursue a sub-specialty focus and in many cases to make themselves more attractive for future employment. Only 2 residents in the past 10 years have had difficulty finding employment following their training. Within the province, we are currently seeking a community surgeon to replace a retiree in Antigonish, and within the next few years to replace the surgeon in Dartmouth

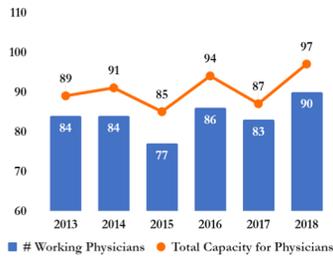
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/plastic-surgery-e.pdf>
- The Undifferentiated Medical Student podcast #051: <https://www.undifferentiatedmedicalstudent.com/ep-051-plastic-surgery-with-dr-jeffrey-janis/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967066>

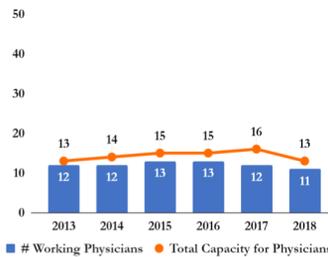
Psychiatry



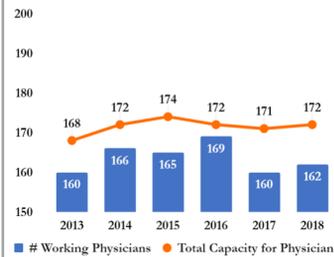
New Brunswick



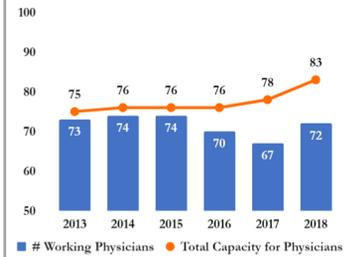
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
39	43.3	4	4.4

50-64y		≥65y	
(n)	(%)	(n)	(%)
3	27.3	1	9.1

50-64y		≥65y	
(n)	(%)	(n)	(%)
70	43.2	22	13.6

50-64y		≥65y	
(n)	(%)	(n)	(%)
27	37.5	5	6.9

Projected need:
N/A

Projected need:
N/A

Projected need:
67

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



30 & 30

Graduating residents (2013-2018 Canadian average) (n, rounded)



122.5

Graduating fellows (2013-2018 Canadian average) (n, rounded)



12.75

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



3.3

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



1.5

Atlantic wage (average gross clinical payments)



\$338,480.25

Program Director Comments:

N/A

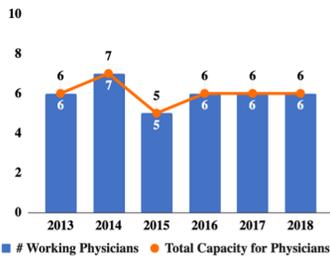
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/psychiatry-e.pdf>
- The Undifferentiated Medical Student podcast #037: <https://www.undifferentiatedmedicalstudent.com/ep-037-psychiatry-with-dr-jeanne-lackamp/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967084>

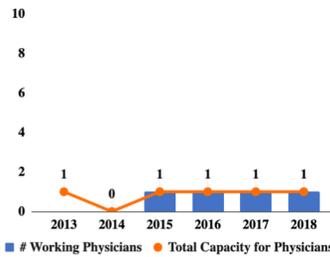
Public Health and Preventative Medicine



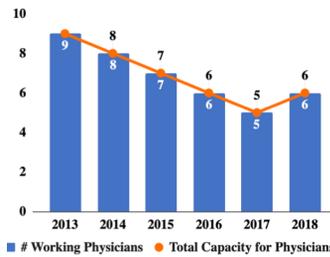
New Brunswick



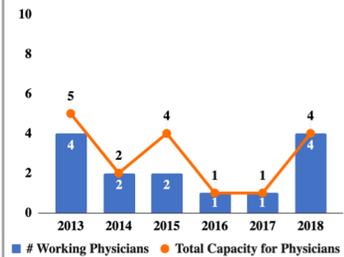
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y					
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)				
1	16.7	0	0	0	0	0	0	1	25	2	50				
Projected need:				Projected need:				Projected need				Projected need:			
N/A				N/A				(2016-2015): 0.3				N/A			

Atlantic vacancies in 2017 & 2018 (n) → 0 & 0

Graduating residents (2013-2018 Canadian average) (n, rounded) → 29.75

Graduating fellows (2013-2018 Canadian average) (n, rounded) → 0

Atlantic vacancies in 2017 (n)
 $\frac{\text{Atlantic vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Atlantic in 2018 (n)}} \rightarrow 0/1$

Canadian vacancies in 2017 (n)
 $\frac{\text{Canadian vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Canada in 2018 (n)}} \rightarrow 0.6$

Atlantic wage (average gross clinical payments) → \$350,629

Program Director Comments:

N/A

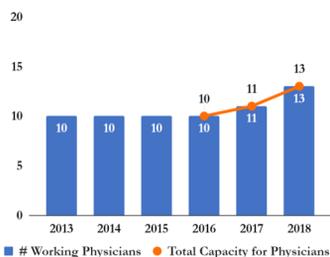
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/public-health-e.pdf>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967082>

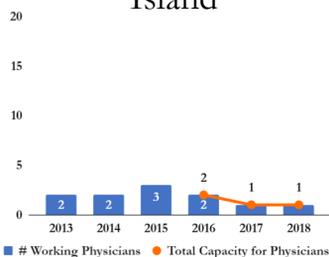
Radiation Oncology



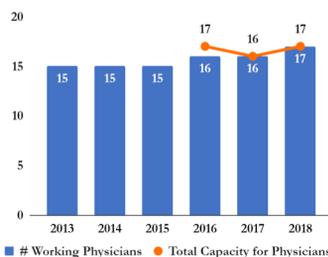
New Brunswick



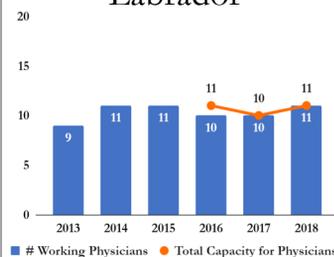
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
6	46.2	1	7.7	0	0	0	0	9	52.9	3	17.6	3	27.3	0	0
Projected need:				Projected need:				Projected need (total				Projected need:			
N/A				N/A				2016-2025): 10				N/A			

Atlantic vacancies in 2017 & 2018 (n) → 0 & 0

Graduating residents (2013-2018 Canadian average) (n, rounded) → 11.5

Graduating fellows (2013-2018 Canadian average) (n, rounded) → 12.75

Atlantic vacancies in 2017 (n) → 0/0
 $\frac{\text{2016 graduates who are now working in Atlantic in 2018 (n)}}{\text{Atlantic vacancies in 2017 (n)}}$

Canadian vacancies in 2017 (n) → 0.4
 $\frac{\text{2016 graduates who are now working in Canada in 2018 (n)}}{\text{Canadian vacancies in 2017 (n)}}$

Atlantic wage (average gross clinical payments) → \$350,629

Program Director Comments:

(NS) Radiation Oncologists practice in larger centres where there are radiotherapy facilities available, and most perform some sort of academic work as well or are appointed with medical schools. In Atlantic Canada, Radiation Oncologists work in Saint John, Moncton, Charlottetown, Halifax, Sydney, and St. John's. For many years there was a shortage of available jobs for graduating Radiation Oncologists. The intake through CaRMS was decreased, and as a result the job forecast is improving. It appears that competitiveness through CaRMS is increasing as well, which likely is the product of a better job forecast. Many graduates from Radiation Oncology residency programs pursue fellowships to make themselves more marketable, particularly if they want to work in larger academic centres. Some graduates are finding jobs without fellowships as well. The job data is tracked nationally, and a very high percentage of trainees find permanent jobs within 1-2 years of finishing residency.

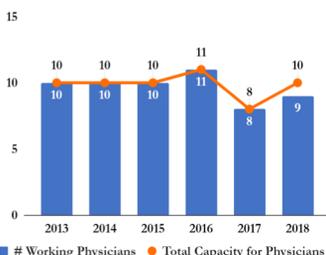
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/radiation-oncology-e.pdf>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967105>

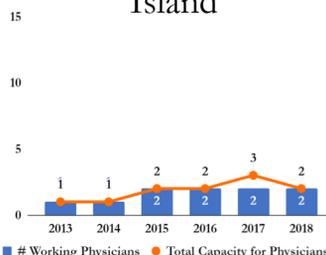
Respirology



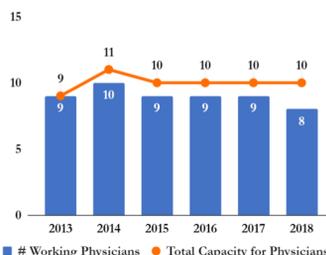
New Brunswick



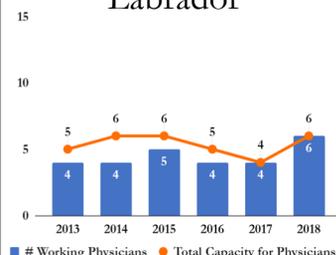
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
1	11.1	1	11.1

50-64y		≥65y	
(n)	(%)	(n)	(%)
0	0	1	50

50-64y		≥65y	
(n)	(%)	(n)	(%)
4	50	1	12.5

50-64y		≥65y	
(n)	(%)	(n)	(%)
0	0	0	0

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 12

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



2 & 3

Graduating residents (2013-2018 Canadian average) (n, rounded)



27

Graduating fellows (2013-2018 Canadian average) (n, rounded)



13

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



1.0

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.6

Canadian wage (average gross clinical payments)



\$407,224

Program Director Comments:

(NS) Respirology offers diverse career opportunities, from academic (including sub-specialization) to community; both ambulatory care to acute medicine in patient and interventional procedural work. The Canadian Thoracic Society recommends approximately 1 respirologist : 50,000 population. This benchmark is not being met in Atlantic Canada with the exception currently of in PEI. Many graduates of respirology programs across the country do an additional 1-2 years fellowship (clinical and/or research) in order to subspecialize, especially if they wish an academic career position. This additional training would not be necessary for most attaining most community positions. Based on surveys of program directors across the country, most if not all graduates find work immediately after completing their studies as a respirologist.

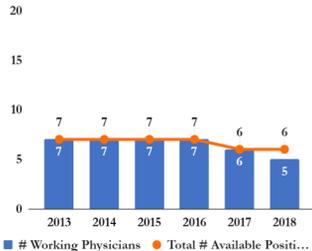
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/respirology-e.pdf>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967100>

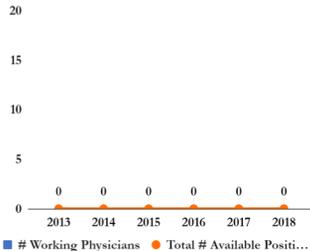
Rheumatology



New Brunswick



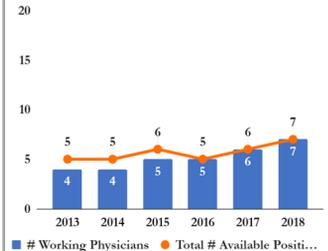
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y	
(n)	(%)	(n)	(%)
3	60	2	40

50-64y		≥65y	
(n)	(%)	(n)	(%)
0	0	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
6	40	0	0

50-64y		≥65y	
(n)	(%)	(n)	(%)
3	42.9	0	0

Projected need:
N/A

Projected need:
N/A

Projected need (total
2016-2025): 7

Projected need:
N/A

Atlantic vacancies in 2017 & 2018 (n)



0 & 1

Graduating residents (2013-2018 Canadian average) (n, rounded)



27

Graduating fellows (2013-2018 Canadian average) (n, rounded)



4.25

Atlantic vacancies in 2017 (n)

2016 graduates who are now working in Atlantic in 2018 (n)



0/2

Canadian vacancies in 2017 (n)

2016 graduates who are now working in Canada in 2018 (n)



0.8

Canadian wage (average gross clinical payments)



\$407,224

Program Director Comments:

N/A

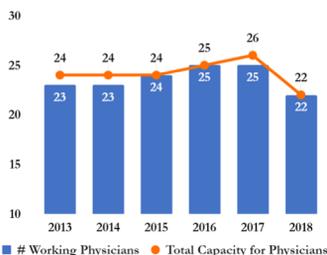
Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/rheumatology-e.pdf>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967113>

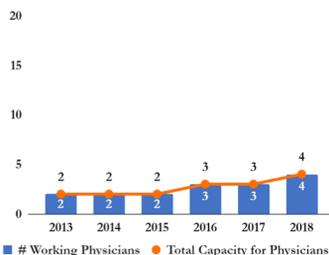
Urology



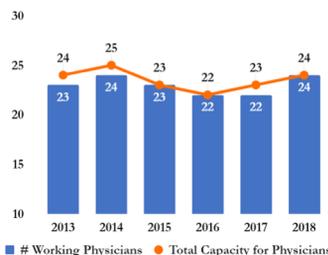
New Brunswick



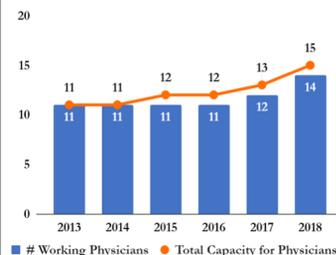
Prince Edward Island



Nova Scotia



Newfoundland & Labrador



50-64y		≥65y		50-64y		≥65y		50-64y		≥65y		50-64y		≥65y	
(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
6	27.3	3	13.6	3	75	0	0	11	45.8	3	12.5	7	50	0	0
Projected need:				Projected need:				Projected need (total 2016-2025): 7				Projected need:			
N/A				N/A								N/A			

Atlantic vacancies in 2017 & 2018 (n)	➔	3 & 1
Graduating residents (2013-2018 Canadian average) (n, rounded)	➔	20.5
Graduating fellows (2013-2018 Canadian average) (n, rounded)	➔	13
$\frac{\text{Atlantic vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Atlantic in 2018 (n)}}$	➔	1
$\frac{\text{Canadian vacancies in 2017 (n)}}{\text{2016 graduates who are now working in Canada in 2018 (n)}}$	➔	0.6
Atlantic wage (average gross clinical payments)	➔	\$612,548

Program Director Comments:

N/A

Helpful Resources:

- CMA specialty profile: <https://www.cma.ca/sites/default/files/2019-01/urology-e.pdf>
- The Undifferentiated Medical Student podcast #032: <https://www.undifferentiatedmedicalstudent.com/ep-032-urology-with-dr-ami-kilchevsky/>
- Royal College Info: <http://www.royalcollege.ca/rcsite/ibd-search-e?N=10000033+10000034+4294967088>

Conclusion

Thank you for reading the “Outlook on the Atlantic Physician Workforce” report. What began as a conversation during the CFMS “Atlantic Regional Marketplace” at the 2018 Spring General Meeting in Halifax is now, a year and a half later, a comprehensive resource for medical students. This work demonstrates the potential that is nested in Atlantic Canada. Through collaboration, leadership and passion, there are endless opportunities.

We hope that you were able to benefit from this report, both by guiding your professional orientation and helping inform your specialty decision. We stress that the best way to interpret the data is through targeted discussion with your respective provincial health authorities and other relevant health stakeholders. Furthermore, we encourage you to use this report as the basis for further advocacy to modernise physician resource planning.

The upcoming steps for this work will be with the newly struck CFMS Health Human Resources Task Force. Their first project is to expand and digitalize the Atlantic Task Force report into a national online interactive platform that will likely be hosted on the CFMS website – stay tuned. This will inform medical students across Canada in their career orientation by allowing them to filter physician workforce data by specialty, province, year, and source of data. We foresee this platform to be of tremendous potential for providing a common medium of communication and collaboration between medical students, provincial health authorities, and along with the other stakeholders involved in health human resources.

National leadership and strategy are key to encourage provinces to start/continue using forecasting models for the workforces of all health-related disciplines. A centralised accumulation of comparable data sets would potentiate the use of artificial intelligence to analyse and forecast health-related workforces. This could form the basis of provincial decision-making, while at the same time inform medical students, amongst others, of the real-time landscape of our profession. Let’s keep pushing the boundaries towards an integrated health system that ultimately provides Canadians access to the highest quality of health care.

2019 Atlantic Task Force



References

1. Canadian Institute for Health Information (2019) *National Physician Database Data Release, 2018–2019*, Ottawa, ON.
2. Canadian Institute for Health Information (2019) *Supply, Distribution and Migration of Physicians in Canada, 2019*, Ottawa, ON.
3. Canadian Medical Association (2018) *Physician Opportunities by Province/Territory and Specialty, Canada, November 2018*, Ottawa, ON.
4. Social Sector Metrics Inc and Health Intelligence Inc. (2012) *Physician Resource Planning: A Recommended Model and Implementation Framework - Final Report*, Nova Scotia Health Authority, Halifax, NS.
5. Social Sector Metrics Inc and Health Intelligence Inc. (2016) *Base Case- Workforce Forecast 2016 – 2025*, Nova Scotia Health Authority, Halifax, NS.
6. Canadian Post-M.D. Education Registry (2018) *Post-M.D. Trainees Completing Training in 2016 with Practice Locations in the Atlantic Provinces in 2018, Canadian Residents/Permanent Citizens Only, 2018*, Ottawa, ON.
7. Canadian Post-M.D. Education Registry (2018) *Post-M.D. Trainees Completing Canadian Training Programs in 2018, Canadian Citizens/Permanent Residents Only*, Ottawa, ON.



Appendix 1: Full length program director comments

ANATOMICAL PATHOLOGY

- (NS) If you forecast your discipline to have many jobs opportunities in 10 years – yes (numbers from Postgrad at Dal are 18 positions in next 10 years in Nova Scotia/Maritime provinces – I'm unsure which). Need for urban vs rural physicians – both urban and smaller community (few truly 'rural' pathology jobs exist – most in community hospitals serving towns >5000 people). Comment on % pursuing training following residency (and if this is to secure work) – approx. 50-70% of AP trainees from Dal will pursue a fellowship. If recent post-grads having difficulty finding work – No. Residency competitiveness – Not particularly competitive
- (NL) In the speciality of Anatomical Pathology in NL we anticipate regular job opportunities in the next 10 years, approximately 1-2 positions per year with anticipated retirements and increasing demands on the speciality. There will likely be both urban and rural positions. Additional training following residency would definitely be an asset. Approaching health regions you are considering to determine need would be judicious. All of our recent graduates are employed as pathologists, most of them in the province or are currently completing fellowships and returning to work in the province. Currently the residency is not very competitive and if you can deal with the weather and occasional cancelled flights then this is a great program. Hope this helps.

ANESTHESIOLOGY

- (NS) Anesthesia is currently undergoing a national shortage and that is certainly true in NS as well, the forecasts continue this shortage for many years with difficulty in filling positions currently available as well as retirements upcoming. The largest areas of need are outside of academic centres, but there are needs in the major academic centres as well. Typically most academic centre positions require fellowships but not always. Approximately half of graduating residents do fellowships following residency, these are not necessary at all if planning to work in a community centre and no recent residents have had difficulty finding employment, although not necessarily in their first choice of institution. Residency positions have become increasingly competitive in recent years but most applicants whose first choice is anesthesia will match somewhere if they are applying across the country.
- (NL) Anesthesiology as a whole has been a very competitive discipline for medical students. This trend seems to be increasing over the past number of years. Our provincial job opportunities in the next ten years mirror the national trend: towards an increased demand for full time anesthesiologists. Like many disciplines our biggest need is in rural areas but we predict demands in urban areas as well. Among the graduates of our program, approximately 50% go on to complete a fellowship. Although none of our graduates have had issues finding full time employment, those set on more specific urban areas have tended to complete fellowships to increase their job prospects.

CARDIAC SURGERY

- (NS) your discipline to have many jobs opportunities in 10 years: in NS 5 cardiac surgery jobs over next 10 years. Need for urban vs rural physicians: all urban. Comment on % pursuing training following residency (and if this is to secure work): 100% - yes. If recent post-grads having difficulty finding work: yes. Residency competitiveness: moderate

DIAGNOSTIC RADIOLOGY

- (NS) For Dalhousie, really PEI, NB and NS, we forecast the need for about 10-12 Radiologists in Halifax over the next 10 years, with probably 10 more needed for the rest of province in that same time period. There would be a need for about another 5-8 in NB and PEI. This is a breakdown for about 50/50 between urban and rural locations.
At Dalhousie, we train our residents to be excellent generalists, but we do foster interest in specializing; nearly all of our residents go on to Fellowship training. Really, in 2019, even general practice Radiologists benefit from Fellowship training, and many of our Residents go on to a rural or general practice after their Fellowship. All of our Resident have found work, with no difficulty.
The Residency is competitive in the sense that each program has an application pool 10-20 times the actual number of positions. However, we find that applicants who are serious and truly interested in Radiology, all match to a program somewhere.



FAMILY MEDICINE

- (NL) Family Medicine at Memorial University is a two-year program offering training in urban, rural and remote locations across Newfoundland and Labrador, New Brunswick and Nunavut. With an emphasis on rural and remote training, residents graduate with the skills, knowledge and confidence to work in these locations upon completion of the program.

The program is comprised of five training Streams (Eastern, Central and Western, Newfoundland and Labrador, Happy Valley-Goose Bay, Newfoundland and Labrador and Iqaluit, Nunavut) allowing incoming residents the opportunity to select a Stream that best aligns with their training and practice goals.

Each year there are a number of job opportunities available in our urban, rural and remote communities. We encourage you to consider living and working in Newfoundland and Labrador!

GENERAL SURGERY

- (NL) I am not sure what the job prospects will be in 10 years in NL. Very hard to predict based on part time surgeons, locums and changes in the breadth of practice in rural areas.
I am not able to comment on any issues of rural vs urban surgeons beyond what is written above.
Over the last several years about half of our graduates have done sub-specialty training.
I think almost all of our recent graduates are working regularly in general surgery but I do not closely monitor this issue.
General surgery has become competitive. In the last 4 years all of our positions have been filled in the first round of the Carms match.

GENERAL INTERNAL MEDICINE

- (NS) Wait times:
This is variable depending on location. In Halifax, our wait times have dramatically shortened due to innovations from one of our faculty members, Dr. Ashley Miller. She has modernized our system so that some referrals can be managed through non-face to face avenues of care, such as phone consults and soon, e-consults. This converted our wait times from over 1 year to approximately 2 months, and it allows us to ensure that the sickest patients get seen promptly. As well, it allows us to empower family physicians to provide great care for their patients in their community, without forcing the patients to drive in to see us in GIM. In some other places (and billing environments), wait times are in excess of a year.
Need for urban vs rural physicians:
Especially in Nova Scotia, rural general internists are needed more than urban general internists. It is important to keep in mind the different practice profiles of rural vs urban. Urban GIM in Nova Scotia generally means that you are slanted towards an academic career, either through education, research, or high level administration. Rural GIM generally means that you are predominately clinically focused, with a variable practice that includes ICU and may include other procedures, such as endoscopy.
If recent post-grads having difficulty finding work:
None of our recent post-grads have had trouble finding work. Within the last 6 years at least, everyone has found a job.
Residency competitiveness:
It is variable based on year. GIM is a larger subspecialty program at Dalhousie, so we have more spots.

NEPHROLOGY

- (NL) Your questions are difficult to answer with respect to Nephrology. The Canadian nephrology community (specifically the Canadian Society of Nephrology & the Royal College Nephrology sub-specialty Committee) have been trying to figure this out for many years. Part of the complication is the issue of subspecialty+Internal Medicine in rural areas. For example, to work in Gander, Newfoundland it is likely the Health Authority would want a Nephrologist to do both Nephrology and Internal Medicine (necessitating job vacancies in both areas). As you know nephrology is primarily a “sort-of” urban specialty (as one generally require a large-ish population for a dialysis unit / maintain skills in transplant & ICU care etc) but there are times that job opportunities arise in smaller towns (but as above, their job would likely entail a significant amount of General Internal Medicine). I am unsure what you mean by “many job opportunities” as in the entire province there are only 10 Nephrologists. I do know that within the St. John’s academic group there are currently 8 working nephrologists (with 2 retired in last couple of years & 2 new replacement hires). Of the 8 it is likely that 1 or 2 will retire within the next 5-7 years. Memorial usually trains one fellow every 2-3 years. Our grads have gone on to many different types of careers (from research / academic to community nephrology / Internal Medicine) – as the



program is tailored for their career goals. About half have gone on to do more training, but usually to pursue work opportunities in Academic centres (including purely clinical training eg. Nephrology is becoming further-specialized with Transplant care likely the best example). I don't believe any our grads have had difficulty finding work, but there are many biases related to that (as they sometimes choose specialties based on potential job vacancies).

Resources that may be helpful include:

the CSN website <https://www.csnsn.ca/about/careers>. There is also a CSN working committee trying to track data with annual reports. The most recent data I could find is here

<https://cjkhd.biomedcentral.com/articles/10.1186/s40697-016-0117-6> (and I have attached the CSN presentation). The Royal College subspecialty committee recently stated "currently there is no comprehensive data collection mechanism to track what nephrology / pediatric nephrology trainees do after training, and how many obtain employment both in Canada and abroad. It was decided that annual completion of the survey be a MANDATORY requirement of program directors to assist the nephrology community with strategic planning of funding for trainee spots, and to build a case, along with the CSN, for establishing a Canadian Workforce Plan for Nephrology and Pediatric Nephrology" email contact: specialtycommittees@royalcollege.ca

RESPIROLOGY

- (NS) Thank you for tackling this important issue and inviting my input, which I will provide as an individual working in an academic training centre with a respirology training program. I do have a good understanding of the workforce issues in Nova Scotia for adult respirology and some understanding of the situation in Atlantic Canada and nationally. Respirology offers diverse career opportunities, from academic (including sub-specialization) to community; both ambulatory care to acute medicine in patient and interventional procedural work. I will try to address the questions you have posed: If you forecast respirology to have many jobs opportunities in 10 years NS completed a physician resource plan in 2011 indicating the province needed 22 respirologists. We currently have only 10 respirologists in the province, unchanged since the report was completed 8 years ago. I am uncertain the exact needs of respirologists in other Atlantic provinces; however, the Canadian Thoracic Society recommends approximately 1 respirologist : 50,000 population. This benchmark is not being met in Atlantic Canada with the exception currently of in PEI.

Need for urban vs rural physicians:

The need exists for both academic (expect 4 retirements over next 5-10 years in Halifax and at least 1 in St. John's) and community respirologists (see above gap in meeting physician resource). Respirologists need to work ideally in a community with access to a hospital in order to perform bronchoscopy, pulmonary functions tests, sleep studies, access to diagnostic imaging, etc. Given small size of Maritime provinces and distribution of hospitals, that reflects situation in most communities within reach of a regional hospital.

Comment on % pursuing training following residency (and if this is to secure work):

Many graduates of respirology programs across the country do an additional 1-2 years fellowship (clinical and/or research) in order to subspecialize, especially if they wish an academic career position. This additional training would not be necessary for most attaining most community positions.

If recent post-grads having difficulty finding work:

As recent past chair of the Royal College exam board and member of the RC specialty committee in respirology, I have seen consistent numbers of graduates sitting the annual exam (approx. 40-45). Based on surveys of program directors across the country, most if not all graduates find work immediately after completing their studies as a respirologist.

Residency competitiveness:

There are 15 training programs in Canada for adult respirology which seem well matched in terms of number of positions available to the numbers of applicants each year through CaRMS.

NEUROLOGY

- (NS) The question about the need for (and the ability to recruit) Neurologists to Nova Scotia (I cannot speak to other Atlantic Provinces, as each province regulates these things differently), is challenging, as Neurologists in Nova Scotia have no control over how many specialists are able to practice in the province. Like many (?most, ? all) specialties, our numbers are capped by the Department of Health. Our group definitely feels that there will be a need for more neurologists in Nova Scotia in the next few decades, especially as our population continues to age, but what we feel doesn't matter all that much to the decision makers. We provide them with data, but they have other sources of data that they use to make their decisions. Neurology is not, generally speaking, a rural specialty, as we need access to neurodiagnostic testing and neuroimaging. Several of our group do travelling clinics in smaller centres. About 50 - 75% of our graduating Residents go on to some level



of sub-specialty fellowship training - we do our best to recruit them back here, but only if there is a vacant position, or a reasonable portion of an FTE equivalent to work with. All of our Residents who graduated in the past decade are working, as far as I am aware. The Residency is fairly competitive - in the past few years, we have had over 50 applicants / year; we interview 36. We have two to three CaRMS positions annually. Occasionally, we will have the ability to offer a position to an IMG candidate.

OTOLARYNGOLOGY

- (NS) If you forecast your discipline to have many jobs opportunities in 10 years:
We are the only training program for the Atlantic Provinces. I expect that there will be jobs probably about equal to the number of candidates we are training.
Need for urban vs rural physicians:
There is likely a need for about 30% of practitioners to be in urban centres/academic centres and about 70% to be in “regional centres” (ie regional hospitals) in groups of 2-5 surgeons.
Comment on % pursuing training following residency (and if this is to secure work):
Approximately 60% of residents pursue fellowship training
If recent post-grads having difficulty finding work:
All of our recent graduates are fully employed. Some would have “preferred” a job in a slightly different location, but all have very good jobs.
Residency competitiveness:
This is difficult to comment on. Most medical students who are interested in Oto-HNS end up with a spot in a program in Canada, and all programs are good.

PLASTIC AND RECONSTRUCTIVE SURGERY

- (NS) As you probably already know, Plastic Surgery is an extremely competitive program to match to through CaRMS. Open source data from the CaRMS website shows that there are approximately 60-75 applicants for Plastic Surgery each year, with 25 positions available. More specific to Dalhousie University (which is the only training program in Atlantic Canada), we receive approximately 45-55 applications each year for 1-2 positions. Once matched however, the Dalhousie program is one of the most well-respected training centres in the country. Residents are extremely well supported in their development to becoming competent Plastic Surgeons, but almost all graduating residents go on to further fellowship training in order to pursue a sub-specialty focus and in many cases to make themselves more attractive for future employment. Only 2 residents in the past 10 years have had difficulty finding employment following their training. As for that employment, I really have little to no authority to speak on that, particularly as it would pertain to opportunities outside of Nova Scotia. Within the province however, we are currently seeking a community surgeon to replace a retiree in Antigonish. There will also be a need within the next few years to replace the surgeon in Dartmouth. Outside of that, it will be another few years before there is a retirement in Halifax I believe.

RADIATION ONCOLOGY

- (NS) Radiation Oncologists practice in larger centres where there are radiotherapy facilities available, and most perform some sort of academic work as well or are appointed with medical schools. In Atlantic Canada, Radiation Oncologists work in Saint John, Moncton, Charlottetown, Halifax, Sydney, and St. John's. For many years there was a shortage of available jobs for graduating Radiation Oncologists. The intake through CaRMS was decreased, and as a result the job forecast is improving. It appears that competitiveness through CaRMS is increasing as well, which likely is the product of a better job forecast. Many graduates from Radiation Oncology residency programs pursue fellowships to make themselves more marketable, particularly if they want to work in larger academic centres. Some graduates are finding jobs without fellowships as well. The job data is tracked nationally, and a very high percentage of trainees find permanent jobs within 1-2 years of finishing residency.

