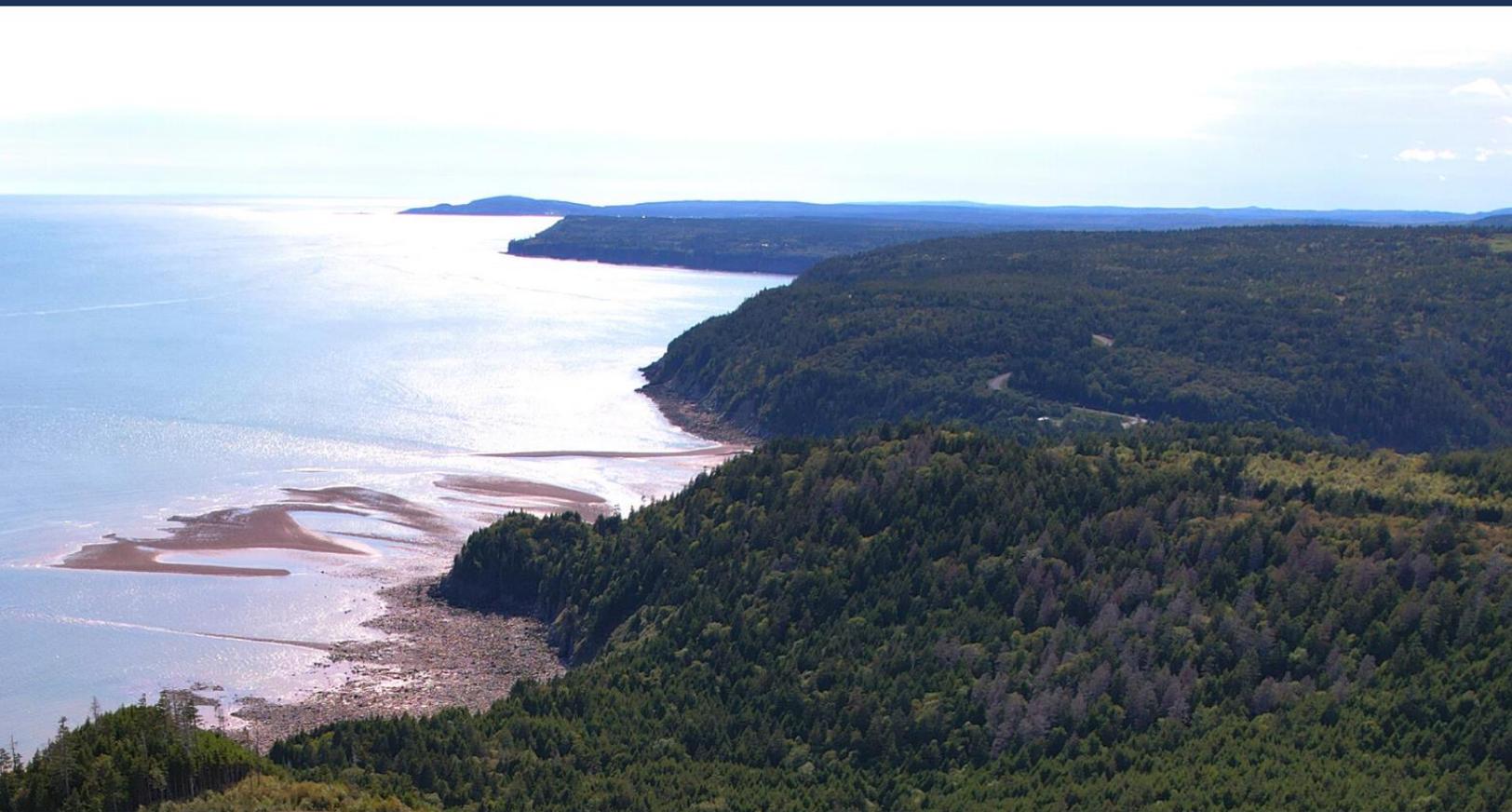


2022 Physician Recruitment & Retention in the Atlantic Provinces



**DALHOUSIE
UNIVERSITY**

FACULTY OF MEDICINE



FACULTY OF MEDICINE



**CENTRE DE FORMATION MÉDICALE
DU NOUVEAU-BRUNSWICK**



CFMS FEMC



Proposed Citation:

MacMillan, KM., Roberts, S., Rainnie, AS., Ko, KR., Lee, W., Beals, M., Kent, S., Noel, MD., Arora, G., Orovec, A., Ley, M., Lee, F., Long, C. (2022). Physician Recruitment and Retention in the Atlantic Provinces. A publication by the Canadian Federation of Medical Students Atlantic Task Force. Retrieved from www.cfms.org



PREFACE

The Atlantic region of Canada is comprised of the provinces of Newfoundland, New Brunswick, Nova Scotia, and Prince Edward Island. Each province has jurisdiction of their respective healthcare system. A mutual challenge for the Atlantic provinces is the paucity of access to physician care, particularly in the rural areas (1,2,3,4). The COVID-19 pandemic catalyzed the need for a sustainable healthcare workforce. For example, engaging medical students through upstream approaches could improve physician recruitment and retention in the Atlantic region.

In 2019, the Atlantic Task Force: Physician Recruitment and Retention Project was initiated by medical students from the Atlantic region. Medical students from Memorial University, Dalhousie University, and Université de Sherbrooke collaborated to create this toolkit. The objective of this toolkit is to provide physician recruiters, health authorities, policy makers, students, and other stakeholders with a medical student-informed guide about the current recruitment and retention models of each of the Atlantic provinces and suggested action plans for future directions. This initiative will help to foster more critical discussion and action plans with physicians and medical trainees to collaborate towards ameliorating the healthcare systems of the Atlantic provinces of Canada.

Thank you for your time and for your interest to contribute. We look forward to working with you. Sincerely,

Kathleen MacMillan, BSc. Pharm
CFMS Atlantic Task Force Co-Chair
CFMS Atlantic Regional Director 2020-2021

Dalhousie University, Dalhousie Medicine
New Brunswick, Class of 2023

Clara Long, BHSc.
CFMS Atlantic Task Force Co-Chair
CFMS Atlantic Regional Director 2019-2020

Dalhousie University, Dalhousie Medicine
Nova Scotia, Class of 2022



References

1. Blanch, V. Think twice before moving to New Brunswick, warns new resident in need of a doctor. CBC News [Internet]. 2021 May 10 [cited 2021 Dec 31]. Available from <https://www.cbc.ca/news/canada/new-brunswick/rodney-pavlica-doctor-shortage-new-brunswick-1.6015987>
2. Mercer, G. Newfoundland and Labrador grappling with severe doctor shortage. The Globe and Mail [Internet]. 2021 Oct 31 [cited 2021 Dec 31]. Available from <https://www.theglobeandmail.com/canada/article-newfoundland-and-labrador-grappling-with-severe-doctor-shortage/>
3. Chang, A. Doctor shortage closes Prince County Hospital for labour and delivery. CBC News [Internet]. 2021 Dec 31 [cited 2022 Jan 1]. Available from <https://www.cbc.ca/news/canada/prince-edward-island/pei-prince-county-labour-delivery-closure-1.6301612>
4. Tutton, M. Increasing need for family doctors in Nova Scotia, as waiting list grows to 78,000. Global News [Internet]. 2021 Oct 12 [cited 2022 Jan 1]. Available from <https://globalnews.ca/news/8259847/ns-family-doctor-shortage-wait-list-grows/>



TABLE OF CONTENTS

Preface	3
References	4
Acknowledgements	7
Atlantic Task Force	9
Literature Review	11
Introduction.....	11
Pre-Medical School	11
Medical School.....	12
Residency.....	14
Practicing Physician	15
Conclusion.....	16
References	17
Current Provincial Recruitment and Retention Efforts.....	20
New Brunswick.....	21
Introduction.....	21
Pre-Medical School	21
Medical School.....	23
Residency.....	25
Practicing Physician	26
Input from Stakeholders and Future Directions.....	27
Recommendations	28
References.....	29
Nova Scotia.....	32
Introduction.....	32
Pre-Medical School	33
Medical School.....	34
Residency.....	37
Practicing Physician	39



Input from Stakeholders and Future Directions.....	42
Recommendations	43
References.....	45
Prince Edward Island	48
Introduction.....	48
Pre-Medical School	50
Medical School.....	51
Residency.....	52
Practicing Physicians	53
Input from Stakeholders and Future Directions.....	54
Recommendations	55
References.....	56
Newfoundland and Labrador	58
Introduction.....	58
Pre-Medical School	60
Medical School.....	61
Residency.....	62
Practicing Physicians	63
Input from Stakeholders and Future Directions.....	64
Recommendations	65
References.....	67



ACKNOWLEDGEMENTS

We are appreciative of the information and contributions for this report from multiple stakeholders in Atlantic Canada.

New Brunswick

We thank Jake Arbuckle (Director of Health Workforce Planning) and Jennifer Valdron (Physician Recruitment Consultant) from the Government of New Brunswick their time to meet with us to share their experiences and expertise regarding physician recruitment programs in New Brunswick (NB). We also thank Raphaël Albert (Member Recruitment & Engagement Specialist) from the New Brunswick Medical Society (NBMS) for sharing information regarding the benefits of practicing in NB and the benefits of NBMS and (FMNB) membership. Thank you to Sarah Melville (Translational Research Associate, Cardiovascular Research New Brunswick (CVR-NB)/ Dalhousie Medicine New Brunswick (DMNB)) for help with editing this report and providing some suggestions. We also thank Centre de formation médicale du Nouveau-Brunswick medical students, Jessica Vandendorre and Julie Thériault for providing their professional perspectives and input on the topic.



Nova Scotia

Many thanks to all of the following individuals who took the time to participate in interviews and ongoing email correspondence towards completion of this toolkit. We would like to thank Jennifer Girard (Physician Advisor, Central & Western), Kevin Chapman (former Director of Partnerships and Finance), Jennifer Boyter (Policy Advisor), and Kim Oakley (Physician Advisory Team Lead) from Doctors Nova Scotia (DNS) for providing valuable input about physician recruitment and retention in the province, rural recruitment, and pre-medical school programs available in Nova Scotia. Additional thanks to Jennifer Girard from DNS for reviewing the initial Nova Scotia toolkit draft. We would also like to thank Marcelle Saulnier (Physician Recruitment Consultant – Medical Learners) and Katrina Philopoulos (Director of Physician Recruitment) from Nova Scotia Health (NSH) who shared important perspectives and feedback from an NSH lens and for opening communication on ways to improve recruitment efforts directed at the medical student level.





Newfoundland

We would like to thank the Regional Health Authorities for their contributions to the development of our Toolkit. As well, we would like to acknowledge all those who participated in the development of the Rural Newfoundland and Labrador Physician Recruitment and Retention Plan 2021.



Prince Edward Island

We would like to thank all those who were involved in interviews, provided resources, and reviewed this document. A special thanks to Rebecca Gill (Director of Health Recruitment, Department of Health and Wellness) for providing valuable input and being a primary point of contact during this project. We would also like to recognize and thank Lauren Kelly Weyman (Manager of Physician Services - Family Medicine, Health PEI), Nadine MacLean (Manager of Physician Services – Specialty Medicine, Health PEI), Amanda Savoie (Human Resources Manager, Health PEI), Gail Scott (Former Director, Medical Affairs, Health PEI), and Dr. Megan Miller (Chief Physician Recruiter, MSPEI) for their time, input, and guidance.



Graphic Design

We would like to thank Maggie Flemming for designing our cover page and special thanks to the Fundy Trail Parkway for providing our Cover Page photography. Other stock images within this document were obtained from Pixabay. We greatly appreciate the artistic talents of Kristin Robin Ko, one of our ATF team members, for designing the layout for this toolkit.



ATLANTIC TASK FORCE

To our knowledge, this is the first report on physician recruitment and retention by medical student leaders in Atlantic Canada.

2021-2022

MEMORIAL UNIVERSITY
OF NEWFOUNDLAND



Stephanie Roberts

Stephanie Roberts
(Atlantic Regional
Director 2021 - 2022)

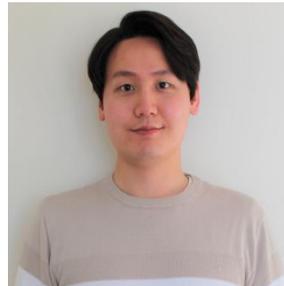
MEMORIAL UNIVERSITY
(PEI REPRESENTATIVE)



Aaron Rainnie

Aaron Rainnie

DALHOUSIE MEDICINE
NEW BRUNSWICK



Wolim Lee
Wolim Lee

DALHOUSIE MEDICINE
NEW BRUNSWICK



Kathleen MacMillan

Kathleen MacMillan
(Co-Chair, Atlantic
Regional Director
2020 - 2021)

DALHOUSIE MEDICINE
NOVA SCOTIA



Gaurav Arora

Gaurav Arora

DALHOUSIE MEDICINE
NOVA SCOTIA



Marissa Ley

Marissa Ley

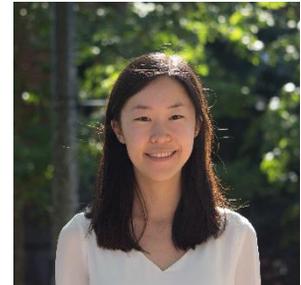
DALHOUSIE MEDICINE
NOVA SCOTIA



Kristin Robin Ko

Kristin Robin Ko

DALHOUSIE MEDICINE
NOVA SCOTIA



Clara Long

Clara Long
(Co-Chair, Atlantic
Regional Director
2019 - 2020)



2019-2020

MEMORIAL UNIVERSITY



Samantha Kent
Samantha Kent

MEMORIAL UNIVERSITY



Melinda D. Noel
Melinda Dawn Noel

NORTHERN ONTARIO
SCHOOL OF MEDICINE
(PEI REPRESENTATIVE)



Meghan
Meghan Beals

DALHOUSIE MEDICINE
NEW BRUNSWICK



Kathleen MacMillan
Kathleen MacMillan
(Co-Chair, Atlantic
Regional Director
2020 - 2021)

DALHOUSIE MEDICINE
NOVA SCOTIA



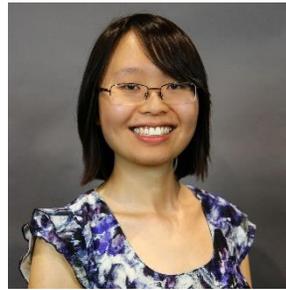
Adele Orovec
Adele Orovec

DALHOUSIE MEDICINE
NOVA SCOTIA



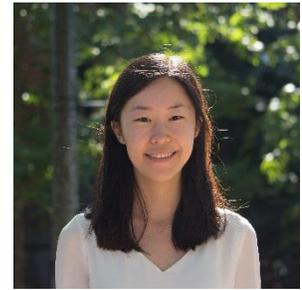
Freddy Lee
Freddy Lee

DALHOUSIE MEDICINE
NOVA SCOTIA



Kristin Robin Ko
Kristin Robin Ko

DALHOUSIE MEDICINE
NOVA SCOTIA



Clara Long
Clara Long
(Co-Chair, Atlantic
Regional Director
2019 - 2020)



LITERATURE REVIEW

Introduction

Many different strategies, geared at all stages of one's medical career (pre-medical school, medical school, residency, post-residency), have been implemented in Canada and internationally for the purposes of recruiting and retaining physicians in rural areas. In addition to examining the current strategies employed in the Atlantic region, it is important to ensure these strategies are evidence-based to maximize results.

Pre-Medical School

Before an individual enters medical school, specific factors can be used to predict the likelihood of an individual to practice in a rural area. The most important factor is growing up in a rural area (1). In a study in Pennsylvania in 1999, data showed that growing up in a rural setting was the most important independent predictor of practicing in a rural area and the desire to become a family physician was another independent predictor of practicing in a rural location. Combined, these two variables described individuals who were five times more likely to enter rural practice than individuals without these variables. Notably, none of the other 90 variables examined, such as age, gender, race or ethnicity, participation in rural curriculum, or expected debt significantly altered the likelihood of rural practice (2). These findings have been corroborated in contemporary Canadian studies (3), and Canadian students interested in rural family medicine at entry into medical school are over 10 times more likely to practice rural family medicine post-residency (4).

These results suggest that it is critical for schools to ensure that rural students are adequately represented in medical school classrooms. Currently, medical students in Canada are less likely compared with the Canadian Census population to identify as having grown up in a rural setting (6.4% vs 18.7%) (5). These numbers have dropped from 10.8% vs 22% in 2001 (6). The most notable barrier to a representative classroom for rural applicants is the lack of applicants. Canadian data shows that rural applicants tend to have similar grades, test scores, and interview scores as urban applicants, resulting in an equal proportion of admission offers among the two groups. This suggests that rural applicants were not disadvantaged during the admissions process, but rather there was a lower proportion of rural applicants relative to urban applicants (7, 8). In a survey to high schoolers in NB, PEI, and Newfoundland, fewer rural students believed they could gain admission to medical school, and medicine was promoted in fewer rural high schools than in urban schools (9). Additionally, an analysis of applicants to the University of Toronto in 2005 showed that rural applicants were more likely to decline admission offers, which was not linked to socioeconomic factors nor clearly explained by the data (7). Although this phenomenon is limited to a single cohort, the authors postulate the significance of social factors and school-specific factors, such as the lack of opportunity for rural training (7).



As those living in rural areas tend to have lower educational status, there may be fewer role models to encourage individuals to seek higher education (10). There are often fewer academic opportunities and limited access to technology in rural areas (10). A geographic barrier exists as students often need to relocate to seek higher education, often at significant financial cost (10). Researchers at the University of Calgary found that Calgary medical students from rural areas tend to have higher levels of debt at entry to medical school and lower mean parental incomes, creating a disproportionate financial burden from rising tuition (11).

Any interventions at this stage should address these barriers. Perhaps the most fruitful opportunities would be outreach to high school or university students to promote continuing education and medical practice. Qualitative research suggests that rural family physicians who are integrated into their community can serve as important role models (12). Other opportunities for change include financial supports and policy changes, such as increasing the number of spots for rural students, both of which were employed and resulted in a 10% to 25% increase in the proportion of rural medical students in Australia from 1989 to 2000 (10). In Manitoba, applicants with rural connections were prioritized in the 2009 admission cycle, resulting in a 22% increase in admission offers to applicants with rural attributes (13).

Medical School

Despite students entering medical school with an intention of practicing rurally, studies have found that this interest declines during medical school except with medical students from a rural background (14). In Canada, 78.8% of those who expressed an initial interest in rural family medicine did not practice in rural settings post-residency (4). It is not well understood why this was the case. Research shows that exposure to rural medicine during medical school alters medical students' attitudes towards rural medicine and is associated with rural practice (15, 16). However, in Canada, the majority of medical school curricula is taught at urban academic centres by urban sub-specialists.

A high quality rural clinical exposure could be an effective way to promote rural practice. This is supported by research studies, although the relationship between participating in an intensive rural curriculum and future rural practice was not independent of pre-medical school factors, such as rural background and interest in family medicine (2). As many of these programs appeal to, and target students with rural backgrounds, an important role of these programs is helping to support and maintain the interest of students with an initial interest in rural practice (2). While having a rural background interacts with rural exposure during medical school in a positive way, all students, including those from urban backgrounds, are encouraged towards rural practice (17, 18, 19). As two-thirds of physicians in rural settings have an urban background, learner experiences can substantially influence those from urban backgrounds to consider rural practice (3, 18). Therefore, mandatory rural rotations may be valuable societally and individually, despite potential initial hesitancy from students (19, 22). Longer (6 to 12 month) rural clinical experiences are most effective, and research shows this has educational equivalency with traditional placements (17, 20). One such example is the longitudinal integrated clerkship (LIC), which offers learning disciplines in a parallel fashion, and has been shown to be an effective alternative to traditional block clerkship rotations (17).



A caveat is that exposure to rural practice during medical school can be either positive or negative. Positive predictors of rural practice include completion of rural electives, family medicine electives, positive experiences during these electives, electives with clinicians who served as good role models, and gaining an understanding of the needs of the people in rural areas (21). Negative predictors include being far from friends or family for extended time, difficulty integrating into the community, inadequate accommodations and social or recreational activities, underdeveloped hospital infrastructure, unwillingness of preceptors to allow students to partake in procedural work, lack of accommodations for vacation time, undesirable call schedules, misconception that rural practitioners are less qualified than urban specialists, and lack of collegial support among rural general practices (13).

As exposure to rural medicine ought to be positive in order to be attractive to students, various structural changes should occur for programs to be more effective. This includes ensuring that students are exposed to encouraging mentors and positive role models and that students are involved in rural community life (22, 23). Overt or subtle negative attitudes towards rural medicine by medical school faculty who tend to be urban specialists can also discourage students from practicing rurally (23). Rather than adopt a homogenous approach to rural training, effort should be made to ensure appropriate fit between students and placement communities to improve student experience, and students should be placed in communities that approximate their future practice locations (24).

Any benefits of undergraduate medical education programs may be lost without adequate exposure to underserved regions during residency (17). Research supports a pipeline approach from pre-medicine to post-graduate training, as factors impacting decision to work rurally interact and accumulate (25). A 2020 systematic review of reviews concludes that an effective recruitment and retention strategy incorporates a holistic approach utilizing multiple strategies while promoting continuity across the phases of a physician's life (pre-medical school, medical school, post-medical school) (24). Some schools have utilized integrated models of medical education to encourage students down the rural pipeline. At Memorial University, which starts with high school engagement and offers extensive rural-focused medical school and residency curricula, 56% of the graduating classes from 2011 to 2020 had a rural background (26). A retrospective cohort study showed that Memorial University graduates were more likely to practice in rural areas compared to other Canadian schools (27). A similar model is in place at the Northern Ontario School of Medicine (NOSM), a distributed rural-based medical school that seeks to recruit rural medical school applicants and emphasizes community engaged curricula (28). Both medical students (OR 2.57) and residents (OR = 57.88) from NOSM were more likely to practice in rural or Northern Ontario (29).

Consideration should also be made towards financial incentives. Surveyed Memorial University medical students and residents responded that they would consider participation in such a program for \$25,000 or less, and they would return for at most 1 year for a year of funding. The most important factor in deciding to participate in such a program was the community they would return to. Students with great financial concerns were 4.8 times more likely to hold a bursary than those with little financial concern. Nearly 80% of participants preferred funds to be delivered directly to students, and 44.5% of participants felt programs should be available to residents and medical students. While students at Memorial University generally approved of



return of service bursaries, they were critical about the lack of accessible information on programs available to students and lack of active and coordinated recruitment and retention efforts (30). These bursaries mostly benefit those already planning on working in an area, as these individuals in Newfoundland were nearly 28 times more likely to hold a bursary, and 80% of trainees using a bursary already planning to work in Newfoundland after their obligation (31). Additionally, American students in return-for-service scholarships or loans were less likely to fulfil their service obligation than healthcare workers who received direct financial incentives and loan repayment programs after completing training (32). The explanation is that practice preferences may change during training (32).

Residency

At the resident level, positive predictors of rural practice include positive experiences during postgraduate training, financial incentives, and social integration into the community including partner satisfaction and access to childcare (21). Negative predictors include burnout, inability of partner to find employment in the rural community, and difficulty balancing personal and professional relationships within the community (21).

Similar to the medical student, exposure to high quality training experiences is critical. As 73% of physicians finishing postgraduate education in 2012 stayed in the same province of their postgraduate education in 2014 (33), postgraduate training location is more predictive of eventual practice location than location of undergraduate training (25, 34). Notably, this may be influenced by selection bias, wherein those most likely to participate in rural practice tend to choose distributed training sites (25). There is an interplay between the factors of rural origin, rural rotations, and the intention to practice rurally (35). However, only 28% of family medical training programs in Canada are rural, with only 10% of all family doctors practicing in rural areas (21).

In British Columbia, residents trained at distributed sites were 15 times more likely to practice rurally than those at metropolitan sites, and felt more prepared for practice, while those from urban programs were least prepared, particularly for work in a rural setting (25). In this study, rural background and rural undergraduate medical training were not independently associated with rural practice. However, when combined with postgraduate training at a distributed training site, these factors were more likely to predict future rural practice (25). The authors suggest that this shows that failure to provide rural postgraduate training could counteract the impact of pre-residency experiences (25).

Rural rotations have had positive effects on future rural practice in all specialities (35, 36). No significant impact was seen with 1-month rural rotations, and survey data reports that rural physicians were satisfied with a median of 6 months of rural training in residency (37). For American family medicine residents participating in a 2-year rural rotation, 76% subsequently practiced in a rural setting, and 72% indicated their intention to stay in that area indefinitely (1). It would be inadequate to focus solely on the resident; by attracting the family and having adequate employment for the partner and educational facilities for the children, communities can increase recruitment (21). In a survey of first year family medicine residents at Dalhousie



University, employment for spouses was the most important factor in choosing a community for future practice (38).

As for medical students, financial incentives may have a role for residents. A study in Newfoundland found that 71.6% of residents fulfilled return of service obligations and were more likely to stay in Newfoundland after completing their obligation (39). However, when return of service was tied to a residency position rather than a bursary, residents were 11.1 times less likely to complete their service obligation compared to those who received the bursary (39). The authors suggest that this may reflect that the high proportion of international medical graduates who participate in the return of service tied residency positions, since international medical graduates are less likely to stay in Newfoundland following residency training in the province (39).

Practicing Physician

Similar to what is seen for residents, common themes that impact retention include physician workload and community integration (3). Specifically, rural family physicians rated not having to be on call more than 1 night in 5 nights, having funding and time off for continued medical education, and having a supply of locums as important in a survey (3). That being said, Canadian survey data shows that rural family physicians are more satisfied than metropolitan doctors with their work, despite being busier and having a higher number of patients (21). However, the high workload makes rural physicians vulnerable to burnout (21). Having adequate housing, partner employment, access to childcare facilities, and financial incentives may be protective factors (21). Additionally, as communities recruit more physicians, the burden on an individual physician is reduced.

In the United States between 1972 to 2009, the National Health Service Corps (NHSC), which was the largest financial incentive program, placed 30,000 family doctors in underserved areas (32). However, this was inadequate to fill the need, with only 4,600 clinicians in the NHSC program in 2008 when 27,000 additional physicians were needed (32). A systematic review found that financial incentive programs had on average drop-out rates of 30%. Additionally, those involved in financial incentive programs were more likely to leave following completion of their obligation than individuals working in similar areas who were not obligated to work in that area. That being said, participants of financial incentive programs were more likely to practice in an underserved area than those who did not participate, suggesting some success in terms of encouraging rural practice, although this is less likely to be at the original placement site. Since those in financial incentive programs tend to have less choice over area of practice, they are also less likely to be satisfied with their work and personal lives in that area. Thus, programs should attempt to accommodate personal preferences in order to increase retention. Qualitative data suggests that programs with high participant satisfaction were very involved with participants at all stages, including the recruitment, matching, preparation, and monitoring and continued support stages (32).



Conclusion

Rural recruitment and retention is an active area of research. The most important factors to predict rural practice include rural background, rural exposure, focus on generalism, financial incentives, and community integration. Effective recruitment and retention efforts would likely target these factors in an integrated fashion, such as through pipeline programs. However, with the lack of up-to-date and regional data specific to the Atlantic provinces, it is difficult to predict the success of implementation of these recruitment and retention programs in this region. Transparency around these strategies and data sharing, including how programs are used, would allow for better evaluation of program outcomes. In addition to a need for large high-power studies, illustrative case studies may elucidate features of successful strategies in a field where data is quite heterogeneous. Future work could also focus on standardizing definitions and examining the retention of rural physician specialists.



References

1. Brooks RG, Walsh M, Mardon RE, Lewis M, Clawson A. The Roles of Nature and Nurture in the Recruitment and Retention of Primary Care Physicians in Rural Areas: A Review of the Literature. *Academic Medicine*. 2002 Aug;77(8):790–8.
2. Rabinowitz HK, Diamond JJ, Hojat M, Hazelwood CE. Rural Health Research: Demographic, Educational and Economic Factors Related to Recruitment and Retention of Physicians in Rural Pennsylvania. *The Journal of Rural Health*. 1999;15(2):212–8.
3. Fleming P, Sinnot M-L. Rural physician supply and retention: factors in the Canadian context. *Can J Rural Med*. 2018;23(1).
4. Mitra G, Gowans M, Wright B, Brenneis F, Scott I. Predictors of rural family medicine practice in Canada. *Can Fam Physician*. 2018 Aug;64(8):588–96.
5. Khan R, Apramian T, Kang JH, Gustafson J, Sibbald S. Demographic and socioeconomic characteristics of Canadian medical students: a cross-sectional study. *BMC Medical Education*. 2020 May 12;20(1):151.
6. Kapadia RK, McGrath BM. Medical school strategies to increase recruitment of rural-oriented physicians: the Canadian experience. Kapadia and McGrath - Medical school strategies to increase recruitment. *Can J Rural Med*. 2011;16(1)
7. Hensel JM, Shandling M, Redelmeier DA. Rural medical students at urban medical schools: Too few and far between? *Open Med*. 2007 Apr 14;1(1):e13–7.
8. Wright B, Woloschuk W. Have rural background students been disadvantaged by the medical school admission process? *Medical Education*. 2008;42(5):476–9.
9. Whalen D, Harris C, Harty C, Greene A, Faour E, Thomson K, et al. Should I apply to medical school? High school students and barriers to application. *Can J Rural Med*. 2016;21(2):46–50.
10. Rourke J. Strategies to increase the enrolment of students of rural origin in medical school: recommendations from the Society of Rural Physicians of Canada. *CMAJ*. 2005 Jan 4;172(1):62–5.
11. Woloschuk W, Lemay J-F, Wright B. What is the financial state of medical students from rural backgrounds during tuition fee deregulation? *Can J Rural Med*. 2010;15(4):156–60.
12. Scott I, Wright B, Brenneis F, Brett-MacLean P, McCaffrey L. Why would I choose a career in family medicine?: Reflections of medical students at 3 universities. *Canadian Family Physician*. 2007 Nov 1;53(11):1956–7.
13. Raghavan M, Martin BD, Roberts D, Aoki F, MacKalski BA, Sandham JD. Increasing the enrolment of rural applicants to the faculty of medicine and addressing diversity by using a priority matrix approach to assign values to rural attributes. *Rural Remote Health*. 2011;11(2):1646.
14. Wendling AL, Shipman SA, Jones K, Kovar-Gough I, Phillips J. Defining Rural: The Predictive Value of Medical School Applicants' Rural Characteristics on Intent to Practice in a Rural Community. *Academic Medicine*. 2019 Nov;94(11S):S14.
15. Williamson M. A Change in Students' Perceptions of Peer and Faculty Attitudes to Rural Medicine following the Introduction of a Rural Health Rotation. *International Journal of Family Medicine*. 2014 Aug 27;2014:e124708.



16. Murray J, Penner C, Heide W, Piasta D, Klassen D. Trajectories of physicians in Manitoba, Canada: the influence of contact points of rural-focused professional learning. *Can Med Educ J*. 2018 Nov 12;9(4):e93–101.
17. Crampton PES, McLachlan JC, Illing JC. A systematic literature review of undergraduate clinical placements in underserved areas. *Medical Education*. 2013;47(10):969–78.
18. Szafran O, Myhre D, Torti J, Schipper S. Factors perceived to influence rural career choice of urban background family physicians: a qualitative analysis. *Canadian Medical Education Journal*. 2020;11(3):e21–30.
19. Critchley J, DeWitt DE, Khan MA, Liaw S. A required rural health module increases students' interest in rural health careers. *Rural Remote Health*. 2007 Jun;7(2):688.
20. Johnson GE, Wright FC, Foster K. The impact of rural outreach programs on medical students' future rural intentions and working locations: a systematic review. *BMC Med Educ*. 2018 Aug 14;18:196.
21. Viscomi M, Larkins S, Gupta TS. Recruitment and retention of general practitioners in rural Canada and Australia: a review of the literature. *Can J Rural Med*. 2013;18(1):13–23.
22. Asghari S, Aubrey-Bassler K, Godwin M, Rourke J, Mathews M, et al. Factors influencing choice to practise in rural and remote communities throughout a physician's career cycle. *Canadian Journal of Rural Medicine*. 2017;22(3): 92-99.
23. Curran V, Rourke J. The role of medical education in the recruitment and retention of rural physicians. *Med Teach*. 2004 May;26(3):265–72.
24. Asghari S, Kirkland MC, Blackmore J, Boyd S, Farrell A, Rourke J, et al. A systematic review of reviews: Recruitment and retention of rural family physicians. *Can J Rural Med*. 2020 Mar;25(1):20–30.
25. Jamieson JL, Kernahan J, Calam B, Sivertz KS. One program, multiple training sites: does site of family medicine training influence professional practice location? *Rural Remote Health*. 2013 Dec;13(4):2496.
26. Rourke J, Asghari S, Hurley O, Ravalía M, Jong M, Parsons W, et al. From pipelines to pathways: the Memorial experience in educating doctors for rural generalist practice. *Rural Remote Health*. 2018 Mar;18(1):4427.
27. Rourke J, Asghari S, Hurley O, Ravalía M, Jong M, Graham W, et al. Does rural generalist focused medical school and family medicine training make a difference? Memorial University of Newfoundland outcomes. *Rural Remote Health*. 2018 Mar;18(1):4426.
28. Strasser R, Lanphear J. The Northern Ontario School of Medicine: responding to the needs of the people and communities of Northern Ontario. *Educ Health (Abingdon)*. 2008 Dec;21(3):212.
29. Wenghofer EF, Hogenbirk JC, Timony PE. Impact of the rural pipeline in medical education: practice locations of recently graduated family physicians in Ontario. *Human Resources for Health*. 2017 Feb 20;15(1):16.
30. Greenaway S-M. The attractiveness of return-for-service bursary programs to medical students in Newfoundland and Labrador [Internet] [masters]. Memorial University of



- Newfoundland; 2011 [cited 2022 Jan 8]. Available from: <https://research.library.mun.ca/10574/>
31. Mathews M, Heath SL, Neufeld SM, Samarasena A. Evaluation of Physician Return-for-Service Agreements in Newfoundland and Labrador. *Healthc Policy*. 2013 Feb;8(3):42–56.
 32. Bärnighausen T, Bloom DE. Financial incentives for return of service in underserved areas: a systematic review. *BMC Health Serv Res*. 2009 May 29;9(1):86.
 33. CAPER. Fact sheet: Practice retention of postgraduate trainees [Internet]. Ottawa Canada. [cited 2022 Jan 8]. Available from: https://caper.ca/sites/default/files/pdf/fact-sheets/FactSheet_Practice_retention_of_PG_trainees_en.pdf
 34. CAPER. Annual Census of Post-MD Trainees [Internet]. Ottawa Canada. [cited 2022 Jan 8]. Available from: https://caper.ca/sites/default/files/pdf/annual-census/2018-19-CAPER_Census_en.pdf
 35. Malhi RL, Ornstein J, Myhre D. The impact of rural rotations on urban based postgraduate learners: A literature review. *Medical Teacher*. 2019 Jul 3;41(7):830–8.
 36. Rourke JTB. A Rural and Regional Community Multi-Specialty Residency Training Network Developed by the University of Western Ontario. *Teaching and Learning in Medicine*. 2005 Oct 1;17(4):376–81.
 37. Chan BTB, Degani N, Crichton T, Pong RW, Rourke JT, Goertzen J, et al. Duration of rural training during residency: rural family physicians prefer 6 months. *Canadian Family Physician*. 2006 Feb 1;52(2):210–1.
 38. Cervin C. An Exploration of the Factors That Influence The Practice Choices of Family Medicine Residents [Internet] [Thesis]. 2011 [cited 2022 Jan 8]. Available from: <http://ec.msvu.ca/xmlui/handle/10587/1119>
 39. Mathews M, Heath SL, Neufeld SM, Samarasena A. Evaluation of Physician Return-for-Service Agreements in Newfoundland and Labrador. *Healthc Policy*. 2013 Feb;8(3):42–56.



CURRENT PROVINCIAL RECRUITMENT AND RETENTION EFFORTS





NEW BRUNSWICK

Introduction

New Brunswick (NB) is one of the smaller provinces in Canada with a population of approximately 750,000 (1). In 2020, NB was ranked 6th regarding number-of-physicians per 100,000 population (249 physicians/100,000). This number was slightly above national average (242 physicians/100,000) (2). However, NB is still struggling to provide sufficient primary care to its residents. In 2017, Statistics Canada reported that approximately 6.4% of New Brunswick's population (about 49,000 individuals) did not have a primary care physician (3). This is a significant problem in New Brunswick, especially considering 20% of its population is over 65 years of age and more than 62% of New Brunswickers have one chronic health condition (4, 5). Therefore, it is vital for New Brunswick to focus on increasing access to health care, and recruiting more physicians may help to accomplish this goal. Recruiting physicians may help to provide timely primary care and mitigate exacerbations of medical conditions before health care expenses become unsustainable.

Pre-Medical School

New Brunswick has two medical training programs: Dalhousie Medicine New Brunswick (DMNB) in Saint John and the Centre de formation médicale du Nouveau-Brunswick in Moncton. DMNB accepts 30 students per year (6). Université de Moncton (Sherbrooke) accepts 24 students annually (7). The province also sponsors seats within other programs,



such as Memorial University of Newfoundland, Université Laval, and Université de Montréal who have ten, three, and three seats respectively for New Brunswick students (8,9,10,11).

DMNB was founded when the Dalhousie Faculty of Medicine partnered with the University of New Brunswick in 2010. The primary goal of DMNB is to promote the recruitment, training, and retention of physicians in NB (12).

Similarly, the Centre de Formation Médicale du Nouveau-Brunswick located in Moncton was established in partnership with the University of Sherbrooke and provides an opportunity for francophone students to study medicine in NB since 2006 (13). This program accepts students from two categories: the first being students with a Bachelor's degree or higher, and the second are students with a preparatory health sciences diploma from the University of Moncton. The two-year diploma, known commonly as DSS, is an important first step to pre-medical recruitment in NB as it conforms to the admission requirements in Quebec (14).

NB universities offer research opportunities to encourage NB students to attend local medical schools. For example, the University of New Brunswick dedicated over 48 million dollars in overall research funding in 2018 which is available to students who are interested in research (15).

Regarding pre-med programs in NB, the University of Moncton offers a two-year pre-med program and UNB offers four-year Bachelor of Science Pre-Professional Programs. These programs are specifically designed for students who are planning on applying to professional schools such as medicine and dentistry (16, 17).

To assure educational equity and to increase the representation of underrepresented groups such as Africans and Indigenous persons of the Maritime region enrolled in medical school, Dalhousie Medicine's Indigenous Health Program and Promoting Leadership in health for African Nova Scotians (PLANS) offers mentoring and support as well as interview preparation (18).

Lastly, Dalhousie Medicine (both the NB and NS campuses) organizes a program called Ask a Med Student where newly accepted medical students answer questions from pre-medical students through Facebook (19). Also, DMNB hosts information sessions catered to pre-medical students annually to provide guidance and information about the admissions process.

In summary, in NB, the most effective recruitment and retention strategies are aimed at students before they start their medical education, specifically strategies that focus on admitting medical students who have a rural background (20).



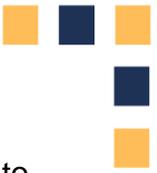
PRE-MEDICAL SCHOOL	
GENERAL OUTREACH	<ul style="list-style-type: none">• Social Media Promotion / Counselling• Information sessions• Pre-med program and Pre-Professional Programs
FINANCIAL INCENTIVES	<ul style="list-style-type: none">• Scholarships, Bursaries, Funding
RURAL RECRUITMENT	<ul style="list-style-type: none">• Community Navigators• Informal Community Outreach
DIVERSITY PROMOTION	<ul style="list-style-type: none">• Promoting Leadership in health for African Nova Scotians (PLANS) and Indigenous Health Program offers mentorship and interview preparation
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none">• Two Canadian Medical Schools in New Brunswick• Allocated medical student seats at three other Medical Schools in Canada (Memorial University of Newfoundland, Université Laval, and Université de Montréal)

Medical School

In New Brunswick, medical students register with both the Provincial Registry for Medical Students and Residents in Health Programs and the New Brunswick Medical Society (NBMS). By registering with these organizations, the Department and Health and Regional Health Authorities can keep track of the number of medical students and residents located in NB (21). This is important, as NB medical seats are distributed to the Sherbrooke, Saint John, Newfoundland, Montreal, and Laval campuses. Further, the organizations can provide information about physician recruitment opportunities. Additionally, the NBMS supports medical students and residents through multiple wellness programs such as MD4MD, and by offering tailored counseling sessions (22).

With the goal of providing an opportunity for medical students to experience rural medicine, DMNB offers Rural Week Experience. During Rural Week Experience, first-year medical students travel to different rural areas of NB to work with physicians for a week during the summer (23). Another program offered by DMNB that exposes medical students to rural community experiences is the Longitudinal Integrated Clerkship Dalhousie (LICD) (24). Through this program, third-year medical students are sent to Miramichi, Moncton, Upper River Valley, or Fredericton for their core clerkship year (24).

NB students have access to scholarships from the schools that they attend, however, several scholarships from Dalhousie and Memorial are specifically intended for students from Nova Scotia and Newfoundland, respectively. Fortunately, students from NB also have a scholarship fund for which only NB students are eligible, and this is through the New Brunswick Medical



Education Foundation (25). If a student accepts one of these scholarships, they must return to NB to practice (26).

The Government of New Brunswick also provides financial support to medical students and residents through scholarships, loans, and bursaries with the goal of encouraging new physicians to establish their practice in NB (27).

In addition to government grants, the Government of NB and the New Brunswick Medical Society introduced the Summer Observership Program for Medical Students. This program is designed to introduce first & second year medical students to practice settings in New Brunswick (28). While participating in this program, first & second year medical students have the opportunity to observe physicians and other healthcare practitioners in a variety of settings. They are paid an hourly wage to job shadow physicians in the province. This program has been put on hold due to COVID-19, with no set date to resume.

The NBMS organized a Mentorship Program which connects students and residents with physicians who practice in their area of interest (29). This greatly increases the chance of retaining physicians as shown by a study by Anisimowicz et al. which determined that good morale among colleagues was one of the top reasons for newly graduated physicians to set up practice in a particular region (30). However, this program has also been put on hold due to COVID-19, with no set date to resume.



MEDICAL SCHOOL	
GENERAL OUTREACH	<ul style="list-style-type: none"> • Social Media Promotion • Information sessions • Family Med Interest Group Dinners • Mentorship Program • Wellness programs (MD4MD, tailored counselling sessions) • Physician Navigator
FINANCIAL INCENTIVES	<ul style="list-style-type: none"> • Scholarships, Bursaries • Paid Summer Observership Program • Tax rebate of up to \$20,000
RURAL RECRUITMENT	<ul style="list-style-type: none"> • Informal Community Outreach • Longitudinal Integrated Clerkship Dalhousie (LICD) • Med1 Rural Week (Accommodations + Travel Funded)
DIVERSITY PROMOTION	<ul style="list-style-type: none"> • Access to Black Student Advising Center • Dalhousie Curriculum Refresh Equity Diversity and Inclusion Sub Committee • Dalhousie Black Medical Students' Association (Dal BMSA)
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none"> • DMNB Welcome Package (stethoscope, reflex hammer, tuning forks, flashlight, and other medical tools)

Residency

In New Brunswick, there are four family medicine residency sites, one integrated family-medicine-emergency medicine residency program site, and one internal medicine residency training site (21).

Residents in New Brunswick receive the same benefits from NBMS and NBMEDED as students, including access to numerous wellness programs and financial supports. Additionally, the NBMS offers the Iype/Wilfred Resident Award to residents who have demonstrated an outstanding level of achievement during their residency training in NB each year (31).

Regarding recruitment incentives, family medicine residents who are in their last two years of residency, and residents in one of the designated specialties who are in their last three years of residency training, may be eligible for a recruitment incentive once they have received an employment offer from one of the Regional Health Authorities (Horizon or Vitalite) and approved by the Department of Health. These incentives include the signing of a Return of Service (ROS) agreement. The amount of the incentives ranges from \$20,000 to \$80,000 depending on specialty, location and ROS years. Designated specialties for 2021-2022 include Anesthesiology, Internal Medicine & Subspecialties, Geriatric Medicine, Otolaryngology, Ophthalmology, Pediatrics, Plastic Surgery, Psychiatry, Thoracic Surgery, and Vascular Surgery (32). These are subject to change annually based on anticipated need.



RESIDENCY	
GENERAL OUTREACH	<ul style="list-style-type: none">• Social Media Promotion• Information sessions• Networking• Recruitment Consultants• Physician Advisors• Physician Navigator (new)
FINANCIAL INCENTIVES	<ul style="list-style-type: none">• Recruitment incentives for new physicians and medical residents.• Highest Resident Gross Salary in Canada• Scholarships, Bursaries
RURAL RECRUITMENT	<ul style="list-style-type: none">• Informal Community Outreach• Rural Rotations
DIVERSITY PROMOTION	<ul style="list-style-type: none">• N/A
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none">• Help with billing numbers, processing and acquiring electronic medical records.

Practicing Physician

To increase the mobility and recruitment of physicians, the Government of New Brunswick (GNB) eliminated the physician billing number system in 2019. As there was a perceived difficulty by physicians in obtaining a billing number in NB, it was thought that this step could help persuade interested physicians to relocate to NB (30, 33).

Financially, the GNB and the NBMS offer various financial incentives with the aim of recruiting more physicians.

1. GNB offers a reimbursement of relocation cost of up to \$8,000 (34).
2. Family physicians, and physicians of aforementioned specialties, will receive a recruitment incentive of between \$20,000 to \$80,000 depending on their specialty, location and number of return of service years (32).
3. NBMS offers the best Parental Leave Program in Canada by paying beneficiaries \$2,000 per week for up to 26 weeks (35).
4. Physicians in NB receive \$3,000 to \$6,000 per year for completing Continuing Medical Education (CME) (35).
5. Fee-for-service physicians who have worked in NB for a minimum of 15 years are eligible to receive a lump-sum payment from a retention fund, the amount received is based on accumulated shares (34).



- 6. Family Medicine New Brunswick (FMNB) guarantees a minimum remuneration of \$175,000 to new physicians in their first year of practice in NB (34).

FMNB, a practice model developed by physicians, offers improved physician work-life balance by overseeing patients while physicians are away for vacation or sickness, providing physicians support when setting up their practices, providing basic guidance with human resources, sharing advice on best business practices, and providing free access to Electronic Medical Records (EMR) (36).

PRACTICING PHYSICIANS	
GENERAL OUTREACH	<ul style="list-style-type: none"> • Social Media Promotion • Information sessions • Networking • Recruitment Consultants • Physician Advisors
FINANCIAL INCENTIVES	<ul style="list-style-type: none"> • Relocation Allowance (up to \$8,000) • Recruitment incentives for new physicians and residents (\$20,000 to \$80,000 depending on specialty) • Parental Leave Program (\$2,000 per week for up to 26 weeks) • Continuing Medical Education support (\$3,000 to \$6,000) • Retention fund eligible to fee-for-service physicians • Guaranteed minimum remuneration of \$175,000 to family physicians practicing in NB
RURAL RECRUITMENT	<ul style="list-style-type: none"> • Higher financial incentives in rural areas
DIVERSITY PROMOTION	<ul style="list-style-type: none"> • N/A
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none"> • Family Med NB (FMNB) offers improved work-life balance through its many programs

Input from Stakeholders and Future Directions

The Government of New Brunswick (GNB) has stated that removing the billing number system has allowed GNB to respond to the needs of physicians more rapidly and to plan better physician recruitment strategies in collaboration with regional health authorities.

GNB also initiated a new program called the Physician Navigation Service which is designed to help improve communication with medical students, residents and physicians interested in practicing in New Brunswick. There will be many beneficial services offered to medical learners such as providing guidance on career opportunities, assisting with the NB physician



recruitment process and updating learners about new trends. Details about these programs will be posted on the N.B. Health Jobs website and the programs will be developed to become a “one-stop-shop” for medical learners based on survey results from medical students and by engaging with medical faculties.

Recommendations

1. To create a **network of physicians in rural areas**. This network may help reduce the pressure and isolation physicians may feel while practicing in rural areas. This may also motivate new physicians to move to rural areas.
2. In a recent survey of medical students and graduates of Dalhousie Medicine New Brunswick (DMNB) about preferred practice locations, the majority of respondents indicated that personal and social reasons were a priority when choosing a geographical location (37). Therefore, we recommend that physicians be **introduced to activities outside of medicine**, particularly in rural communities. Additionally, from the results of the survey, we recommend that a **life-partner hiring system** should be implemented in New Brunswick in order to attract physicians and their partners.



References

1. Canada Population. Population of Canada by Province/Territory 2021/2022 [Internet]. n.d. [cited 2022 Jan 9]. Available from: <https://canadapopulation.org/population-of-canada-by-province-territory/>
2. Canadian Institute for Health Information. Supply, Distribution and Migration of Physicians in Canada, 2020 – Data Tables. [Internet]. 2020. [cited 2022 Jan 9]. Available from: <https://secure.cihi.ca/estore/productFamily.htm?pf=PFC4677&lang=en&media=0>
3. NBMS. Finding a Family Physician. [Internet]. n.d. [cited 2022 Jan 9]. Available from: <https://www.nbms.nb.ca/finding-a-family-physician/>
4. McGeorge K, Bateman TM. Settling for Mediocrity: Aging and Health Care in New Brunswick. JNBS [Internet]. 2017 Nov. 23 [cited 2022 Jan. 9];8. Available from: <https://journals.lib.unb.ca/index.php/JNBS/article/view/25877/30025>
5. New Brunswick Health Council. The Cost of Chronic Health Conditions to New Brunswick. [Internet]. 2016 [cited 2022 Jan 9]. Available from: https://nbhc.ca/sites/default/files/publications-attachments/June%202016_The%20Cost%20of%20Chronic%20Health%20Conditions%20to%20NB%20-%20FINAL.pdf
6. DMNB. Medical School Admissions [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://medicine.dal.ca/departments/core-units/DMNB/education/admissions.html>
7. University of Sherbrooke. Moncton, New Brunswick Site. Université de Sherbrooke [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://www.usherbrooke.ca/doctorat-medecine/programme/1-programme-3-sites/site-de-moncton-au-nouveau-brunswick/>
8. New Brunswick Canada. Medical Students & Residents [Internet]. n.d. [cited 2021 Aug 26]. Available from https://www2.gnb.ca/content/gnb/en/corporate/promo/careers_in_healthcare/Medical-Students-and-Residents.html
9. MUN Faculty of Medicine. Faculty of Medicine - Admissions-Faculty of Medicine. Memorial University [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://www.med.mun.ca/getdoc/b550afe2-219e-4de3-a48a-119eadf1d623/New-Brunswick.aspx>
10. Université Laval. Admission [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://www.fmed.ulaval.ca/programmes-detudes/etudes-en-medecine/doctorat-de-1er-cycle-en-medecine/admission/>
11. AFMC. ADMISSION REQUIREMENTS OF CANADIAN FACULTIES OF MEDICINE [Internet]. 2021 [cited 2021 Aug 26]. Available from https://www.afmc.ca/sites/default/files/pdf/2021_admission-requirements_EN.pdf
12. MacMillan, K. M. Stay on MD: Recruitment and retention factors for Dalhousie Medicine New Brunswick graduates. ATLANTIC HEALTH EXPLORATION AND DISCOVERY. 2020 July 5 [cited 2021 Aug 26]. Available from <https://www.discoveringtogether.ca/posters/stay-on-md-recruitment-and-retention-factors-for-dalhousie-medicine-new-brunswick-graduates>
13. Morris, C. New Brunswick to get medical school. Canadian Medical Association Journal. 2006;174(5), 606–607. Available from <https://doi.org/10.1503/cmaj.060072>



14. Université de Sherbrooke. Admission - Le programme de doctorat en médecine - Université de Sherbrooke [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://www.usherbrooke.ca/doctorat-medecine/admission/#c138311-1>
15. UNB. Research Highlights | UNB. University of New Brunswick [Internet]. n.d. [cited 2021 Dec 20] Available from <https://www.unb.ca/research/highlights.html>
16. Université de Moncton. DOUBLE YOUR POTENTIAL BY PERFECTING YOUR SECOND LANGUAGE [Internet]. 2016 [cited 2021 Aug 26] Available from https://www.umoncton.ca/publications_docs/immersion/2016/decembre/files/assets/common/downloads/Post-secondary%20French%20Immersion.pdf
17. UNB. Pre-Professional Programs in Science | UNB. University of New Brunswick [Internet]. n.d. [cited 2021 Dec 20]. Available from <https://www.unb.ca/academics/calendar/undergraduate/current/saintjohnprograms/bachelorofscience/preprofessionalprogramsinscience.html>
18. Dalhousie Medicine. Education Equity. Dalhousie University [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://medicine.dal.ca/departments/core-units/admissions/about/affirmative-action-policy.html>
19. Ask a Med Student. Dalhousie Medicine [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://medicine.dal.ca/departments/core-units/admissions/application-process/askamedstudent.html>
20. Lafortune, C., & Gustafson, J. Interventions to improve recruitment and retention of physicians in rural and remote Canada: a systematic review [Internet]. University of Western Ontario Medical Journal. 2019;88(1). Available from <https://doi.org/10.5206/uwomj.v88i1.6184>
21. GNB. Medical Students & Residents. New Brunswick Canada [Internet]. n.d. [cited 2021 Aug 26]. Available from https://www2.gnb.ca/content/gnb/en/corporate/promo/careers_in_healthcare/Medical-Students-and-Residents.html
22. NBMS. Student & Resident Orientation GUIDE [Internet]. 2020 Aug. [cited 2021 Aug 26]. Available from <https://www.nbms.nb.ca/wp-content/uploads/2020/08/P05-20101-Student-Resident-Guide-Eng.pdf>
23. DMNB. Teaching Opportunities at DMNB. Dalhousie University [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://medicine.dal.ca/departments/core-units/DMNB/faculty-staff/faculty-development/TeachingOpportunitiesAtDMNB.html>
24. DMNB. Longitudinal Integrated Clerkship Dalhousie (LICD). Dalhousie University [Internet]. n.d. [cited 2021 Aug 26]. <https://medicine.dal.ca/departments/core-units/DMNB/education/LICD.html>
25. The New Brunswick Medical Education Foundation Inc. Scholarships. NBMEDED [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://www.nbmeded.ca/scholarships>
26. Huddle. N.B. Medical Scholarship Program Keeps Our Best And Brightest Practicing Here At Home. Huddle Business Is Good. 2020 Jan 29 [cited 2021 Aug 26]. Available from <https://huddle.today/n-b-medical-scholarship-program-keeps-our-best-and-brightest-practicing-here-at-home/>
27. GNB. Student Financial Services - Post-Secondary Education, Training and Labour. New Brunswick Canada [Internet]. n.d. [cited 2021 Aug 26]. Available from <https://www2.gnb.ca/content/gnb/en/departments/post->



- secondary_education_training_and_labour/Skills/content/FinancialSupport/StudentFinancialServices.html
28. NBMS. Summer Medical Observership Program » New Brunswick Medical Society. New Brunswick Medical Society [Internet]. n.d. [cited 2021 Aug 31]. Available from <https://www.nbms.revstrat.net/students-and-residents/medical-students/summer-medical-observership-program/>
 29. NBMS. Mentorship Program Application Form (Physician) » New Brunswick Medical Society. New Brunswick Medical Society [Internet]. n.d. [cited 2021 Aug 31]. Available from <https://nbms.revstrat.net/students-and-residents/mentorship-program-application-form-physician/>
 30. Anisimowicz, Y., Miedema, B., Easley, J., & Bowes, A. E. Factors Influencing Family Medicine Resident Retention and Newly Graduated Physicians' First Practice Location. *Journal of New Brunswick Studies / Revue d'études Sur Le Nouveau-Brunswick*, 2017;8. Available from <https://journals.lib.unb.ca/index.php/JNBS/article/view/25884>
 31. NBMS. Celebration of Medicine - Past Award Recipients. New Brunswick Medical Society [Internet]. 2021 [cited 2021 Dec 30]. Available from <https://www.nbms.nb.ca/celebration-of-medicine-past-award-recipients/>
 32. GNB. Recruitment incentives for New Physicians and Medical Residents 2021–2022 PROGRAM GUIDELINES [Internet]. 2021 [cited 2021 Dec 30]. Available from https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/Recruitment/Physician_Recruitment_Incentives.pdf
 33. GNB. Government eliminating physician billing number system. New Brunswick Canada [Internet]. 2019 Sept 29 [cited 2021 Sept 2]. Available from https://www2.gnb.ca/content/gnb/en/news/news_release.2019.09.0517.html
 34. GNB. Recruitment & Retention Incentives. New Brunswick Canada [Internet]. n.d. [cited 2021 Sept 2]. Available from https://www2.gnb.ca/content/gnb/en/corporate/promo/careers_in_healthcare/Recruitment-and-Retention-Incentives.html
 35. Albert, R. Practising Medicine in New Brunswick [Power Point Presentation]. COAMS 2021, Saint John, Canada. 2021 May 15.
 36. FMNB. For Physicians – Family Medicine New Brunswick. Family Medicine NB. n.d. [cited 2021 Sept 2]. Available from <https://www.fmnbc.ca/for-physicians/>
 37. MacMillan, K., Brunt, K., Melville, S., Dutton, D., Fournier, A., Alexiadis, B. Stay on MD: Recruitment and Retention Factors for New Brunswick Medical Graduates. 2021 Apr 30 [cited 2021 Sept 2]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8105566/>



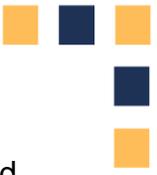
NOVA SCOTIA

Introduction

Nova Scotia is Canada's second smallest province after Prince Edward Island to its north. Largely surrounded by the Atlantic Ocean with the majority of the province consisting of the Nova Scotia peninsula, Nova Scotia has become the most populated province within the Atlantic region having recently reached over 1 million residents as of 2021. The province's capital, Halifax, houses one of Dalhousie Medical School's campuses and accepts 94 new medical students each year after a recent seat increase.

Nova Scotia is divided into four health zones: Western (Zone 1: Annapolis Valley, South Shore and South West), Northern (Zone 2: Colchester-East Hants, Cumberland and Pictou areas), Eastern (Zone 3: Cape Breton, Guysborough and Antigonish areas), and Central (Zone 4: Halifax area, Eastern Shore and West Hants). All zones are managed by Nova Scotia Health (NSH), which is the organization responsible for delivering publicly funded healthcare, hospital management, various long-term care facilities, and community health programs for Nova Scotia. Separate from NSH, the IWK Health Centre, located in Halifax, Nova Scotia, is the largest pediatric hospital in the Atlantic and provides pediatric and maternity healthcare to the entire Maritime (NB, NS, PEI) region.

NSH collaborates and reports to the Department of Health & Wellness, which is responsible for allocating funding for various healthcare sectors and endeavors including physician recruitment & retention. More than 81,000 Nova Scotians are waiting for a family physician on



the Need a Family Practice Registry as of November 2021 (1). This number originally peaked in 2018 at 59,000 and decreased to a low of 45,000 in 2020 (2). However, numbers have substantially risen over the past year, which may be attributed to the impacts of COVID-19, physician retirement, and an increase in the Nova Scotia population. NSH, the Nova Scotia Government's newly minted Office of Health Care Professionals Recruitment, Doctors Nova Scotia (membership organization representing physicians across Nova Scotia), and several other groups including community led organizations continue to work to respond to increasing needs within the province. An overview of these efforts are detailed below.

Pre-Medical School

Medical school remains a popular choice across the country with thousands applying for admission each year. However, recruitment of diverse racial, cultural, rural and socioeconomic backgrounds remains challenging (4). In 2016, the Dalhousie Medicine Admissions Review Committee noted that "there remains the perception that medicine is a profession for the privileged" (5). The committee members acknowledged that applicants from more privileged backgrounds may have better connections for health care opportunities and increased access to concierge services such as MCAT preparation courses, consultants, and tutors (5). The committee recommended increased cultural competency and representation of its committee members as well as improved outreach and mentorship prior to application (5).

At Dalhousie, various programs (mentorship, camps, resources, studentships, bursaries, financial assistance, and information sessions/presentations) are offered for individuals at various levels who identify as Indigenous or of African descent. Some examples aimed at attracting Indigenous learners to the medical field include: the Circle of Support Mentorship Program, which connects a learner to an advisor or health care professional for formal mentorship (6); the Eagle "Kitpu" Wise Program aimed at exposing teens to potential health careers (7); and the Atlantic Indigenous Mentorship Network (AIM), which supports Indigenous-led health research in the Atlantic region (6). For African Nova Scotians, Promoting Leadership in health for African Nova Scotians (PLANS) offers summer camps, mentorship programs, research opportunities, and various other resources (8). With the recent COVID-19 pandemic, offerings have shifted towards virtual information sessions.

There is evidence that recruitment of medical students with rural upbringings may positively impact their decision to practice in rural areas (9). Therefore, there have been suggestions to increase overall exposure to medicine in rural high schools to improve representation of students from rural backgrounds (10). Many rural communities are also interested in reaching out to students interested in medicine but often find it challenging to discover and connect with them. However, in cases where communities are made aware of such students, congratulatory letters and gift baskets have occasionally been sent upon successful acceptance into medical school. Overall, many outreach and recruitment efforts are often completed informally.

The recent Mentor Plus Strategy that is being implemented in New Glasgow, Truro, and Kentville stemmed from an initiative to engage retired/near-retired seniors and connect these skilled mentors with Nova Scotian youth (11). While mentorship covers a range of careers, healthcare has been identified as an important sector for recruitment.



For general recruiting, physicians sometimes attend high school job fairs. Select high schools can also arrange physician shadowing in the community through their cooperative education program. Through this program, students can volunteer with Nova Scotia Health (NSH) and rotate through a myriad of healthcare professions to observe the day-to-day life of medical practitioners.

PRE-MEDICAL SCHOOL	
GENERAL OUTREACH	<ul style="list-style-type: none"> • Social Media Promotion • Job/School Fairs • Information Sessions • Health Profession/Science Camps
FINANCIAL INCENTIVES	<ul style="list-style-type: none"> • Scholarships, Bursaries, Funding • Membership Discounts
RURAL RECRUITMENT	<ul style="list-style-type: none"> • Community Navigators • Informal Community Outreach
DIVERSITY PROMOTION	<ul style="list-style-type: none"> • Targeted Outreach, Scholarships/Bursaries/Funding, Programs, Mentorship • BIPOC-specific: Circle of Support Mentorship Program, Eagle "Kitpu" Wise Program, Atlantic Indigenous Mentorship Network (AIM), Promoting Leadership in health for African Nova Scotians (PLANS), Dalhousie Black Medical Students' Association (DBMSA)
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none"> • Mentor Plus Strategy • Cooperative Education Programs in Participating High Schools

Medical School

In 2019, The Nova Scotia provincial government added 16 seats to Dalhousie Medicine Nova Scotia campus (DMNS) to promote recruitment, retention, and training of physicians in the province. These seats are specifically reserved for “rural communities, African Nova Scotians, Mi’kmaq, and other Indigenous peoples” (12).

Networking opportunities are abundant throughout the year and continue throughout medical school. Rural medicine and family medicine are often highlighted and strongly encouraged. At the medical learner level, organizations like the NSH and Doctors Nova Scotia (DNS) aim to build positive relationships with students. Engagement between these organization and students often increases during clerkship when students are actively ranking residency options.

At Dalhousie Medical School, recruitment efforts begin as early as the start of first year through events and promotion from mentors, professors, and speakers. DNS Welcome Reception is



one of the earlier introductions to DNS and the Medical Society of Prince Edward Island (MSPEI). Students are gifted stethoscopes, reflex hammers, tuning forks, flashlights, and other medical tools during this welcome ceremony and can engage in networking with local physicians.

Financial assistance, bursaries, and scholarships are available for students with rural Nova Scotia upbringings and/or express intent to work in a rural setting. Funding is also available for individuals who identify as Indigenous or African Nova Scotian.

More recently, Nova Scotia Health (NSH) has directed their recruitment focus towards medical learners. The Physician Recruitment Consultant-Medical Learners position was created with the goal of strengthening connections specifically with medical students and residents. The Physician Recruitment Consultant is a great contact for questions on resources available to medical learners, practicing in Nova Scotia, connecting with Community Navigators in rural areas, and collecting feedback on how best the NSH can support medical learners in Nova Scotia. Community Navigators – employees aimed at promoting recruitment and retention in rural communities – are quite open to assisting medical learners. Community Navigators can provide useful information about their rural area and offer connections to local supports, other physicians, residents, and other contacts. They play an important role in transitioning incoming physicians to their new community (13).

To further encourage medical teaching, the recent master agreement between physicians and the government of Nova Scotia has secured \$900,000 to increase preceptor payments to \$450/week for medical students and \$250/week for residents to promote medical teaching (14,15).

DNS also sponsors many events such as Dining with Docs, the recent mini-MBA financial literacy lecture series, and a virtual cooking night. In the past, clinic crawls have been organized where medical students are taken to various clinics within a particular community to learn about rural practice and connect with local physicians. Pizza nights would be organized as well where students could engage with DNS and ask questions or learn about various topics like payment models. DNS is very open to collaboration with students and has stated that they recognize the importance of Dalhousie medical students.

First year medical students complete Rural Week in mid-May. In Rural Week, students shadow and learn clinical practice across various fields (family medicine, surgery, pathology, etc.) in rural areas within Nova Scotia for 4 days. Stipends for travel (up to \$150) and accommodations (up to \$40.00 per night to a maximum of \$160.00 for the week) are provided. Additional funding can be provided if the student and preceptor are able to attend an extra day.

Several extracurricular experiences are also available throughout medical school. All-expenses paid rural trips coordinated each term by the Family Medicine Interest Group (FMIG) introduce students to rural areas. Students are taken on tours of local healthcare facilities, meet with rural physicians and residents, and engage in clinical skills sessions.



In third year, students have the opportunity to participate in the Longitudinal Integrated Clerkship Dalhousie (LICD) program (16). The main clerkship units are integrated throughout this 1-year program and completed in a rural community ranked by the student. There are typically site visits held at potential LIC communities. However, these events held virtually this past year because of the COVID-19 pandemic. Despite pandemic challenges, the LIC program and involved communities worked hard to welcome new LIC students and organized a virtual dinner and welcome event.

Funding and free/discounted lodging are also available for students who have rotations in rural areas. For example, Yarmouth was recently noted to be constructing new affordable housing specifically for medical learners (students and residents), and Truro has free apartments available for medical learners. Some physicians and residents are also quite willing to provide housing for medical students during clerkship and electives for free or discounted rates. Each community is slightly different, and students may need to inquire about availabilities depending on placement.

To encourage and support diversity for present and future students and physicians, Dalhousie has formed the Equity Diversity and Inclusion Sub Committee as part of its 2021 Undergraduate Curriculum Refresh (17). Recommendations from this committee focused on dismantling existing oppressive structures that lead to failures in increasing representation in medicine for black, indigenous, and other people of color (BIPOC) (17). The curriculum refresh remains in progress, but a few changes have been implemented to increase diversity, equity, and inclusion education. The Dalhousie Black Medical Students' Association (DBMSA) was also created as of 2021 to promote a culturally safe learning environment and to help support and increase representation for the black pre-medical and medical student cohort at Dalhousie.

For francophone students, the French in Medicine Interest Group provides connections to Réseau Santé, an organization that seeks to improve access to French in healthcare and has connections to French-speaking physicians in the community for additional networking opportunities.



MEDICAL SCHOOL	
GENERAL OUTREACH	<ul style="list-style-type: none"> • Social Media Promotion • Job/School Fairs • Information Sessions • Dinners • Networking
FINANCIAL INCENTIVES	<ul style="list-style-type: none"> • Scholarships, bursaries
RURAL RECRUITMENT	<ul style="list-style-type: none"> • Community Navigators • Informal Community Outreach • Longitudinal Integrated Clerkship Dalhousie (LICD) • Weekend Rural Trips (Fully Covered) • Med1 Rural Week (Accommodations + Travel Covered) • Free/Discounted Medical Learner-specific Accommodations in Select Locations
DIVERSITY PROMOTION	<ul style="list-style-type: none"> • Targeted Outreach, Scholarships/Bursaries/Funding, Programs, Mentorship • BIPOC-specific: Dalhousie Curriculum Refresh Equity Diversity and Inclusion Sub Committee, Dalhousie Black Medical Students' Association (Dal BMSA) • Francophone-specific: Réseau Santé
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none"> • DNS Welcome Package (stethoscope, reflex hammer, tuning forks, pupil light, measuring tape, visual acuity card)
GOVERNMENT CHANGES	<ul style="list-style-type: none"> • +16 seats to Dalhousie Medicine Nova Scotia targeting rural communities, Mi'kmaq and other Indigenous peoples, and African Nova Scotians • Increased Preceptor Payments to \$450/Week • New Office of Health Care Professionals Recruitment (see Practising Physician for details) • New NSH Physician Recruitment Consultant-Medical Learners Position

Residency

Since 2018, 10 rural family medicine residency positions (18) and 15 new specialist residency positions (19) have been added to Nova Scotia, one of the few jurisdictions in Canada to do so within the past few years. Additionally, Nova Scotia, New Brunswick and Prince Edward Island currently have the highest gross salaries for residents in Canada (20).

During the COVID-19 lockdowns, medical departments have begun increasing their social media presence. Some have created videos and posts about their staff, residents, and environment to garner interest. Recruitment efforts at the residency level continue with



networking opportunities, clinic crawls, community recruiter meets, social media outreach, membership discounts/resources, and access to rural community navigators and free accommodations for rural appointments with added membership bonuses such as access to extended health/dental benefits from DNS and Maritime Resident Doctors (MarDocs) (21). Physician advisors are also available in each region of Nova Scotia for advice around return of service (ROS) contracts, alternative payment plans (APPs), clinical/academic funding plans (C/AFP), practice establishment, efficient medical billing, and electronic medical records (EMRs) (21).

Residents can elect to do rural rotations and efforts put into distributed learning have been well received. Annapolis Valley and South West Nova Family Medicine sites in Nova Scotia also offer a longitudinal curriculum instead of rotation-based, which can be considered analogous to the LIC program within medical school (22).



RESIDENCY	
GENERAL OUTREACH	<ul style="list-style-type: none"> • Social Media Promotion • Job Fairs • Information Sessions • Dinners • Networking • Recruitment Consultants • Physician Advisors
FINANCIAL INCENTIVES	<ul style="list-style-type: none"> • Highest Resident Gross Salary in Canada
RURAL RECRUITMENT	<ul style="list-style-type: none"> • Community Navigators • Informal Community Outreach • Rural Rotations • Clinic Crawls • Increased distributed learning • Longitudinal curriculum (Annapolis Valley, Cape Breton- Inverness, North Nova, and South West Nova Family Medicine Sites only)
DIVERSITY PROMOTION	<ul style="list-style-type: none"> • Targeted Outreach, Scholarships/Bursaries/Funding, Programs, Mentorship
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none"> • Extended Health & Dental
GOVERNMENT CHANGES	<ul style="list-style-type: none"> • +10 Family Medicine Positions • +15 Specialist Positions • Possible additional targeted residency positions in future • Increased Preceptor Payments to \$250/Week • New Office of Health Care Professionals Recruitment (see Practicing Physician for details)

Practicing Physician

The Nova Scotia Department of Health & Wellness recently created the Office of Health Care Professionals Recruitment (23,24). Previously, recruitment and retention management was dispersed within the Department of Health & Wellness, which oversees a host of programs and services including public health, continuing care, addiction services and more. The new more focused Office of Health Care Professionals Recruitment is dedicated to developing innovative strategies for healthcare recruitment in the province. The office provides prospective and practicing physicians interested in working within Nova Scotia a more specific government point of contact that reports directly to the Minister of Health & Wellness.

Job fairs are typically hosted in various parts of the country and around the world (mainly in Atlantic provinces, Quebec, Ontario, USA, UK, and Ireland) (3). The “More than Medicine+” website is also a useful platform that provides new physicians with information about job



opportunities, financial incentives, and perks of living in Nova Scotia (25). Physician Advisors and Recruitment Consultants based in their respective regional zones can be found on this website. Physician and Surgeon Ambassadors/Advisors can share their experiences practicing and living in the community and offer useful advice from lived experience. Recruitment Consultants can assist in job hunting for spouses, finding accommodations, immigration, and connecting with the local community. DNS also has a Physician Advisory Team whose members can assist with reviewing the Master Agreement, opening or closing a practice, fee structures, and more (26).

There are also several local community committees and groups that have been formed specifically to recruit physicians. They often include a local health foundation, chambers of commerce and other local businesses. The Community Navigators are often employed by these groups. For example, the Mid Valley Region Physician Recruitment & Retention Committee have worked with car rental services, real estate agents, banks, and more to assist recently recruited physicians settled in (27).

In addition to outreach efforts, the Department of Health & Wellness in Nova Scotia provides several financial incentives (28,29). The following describes the previously available incentives before 2021-2022:

1. The Physician Tuition Relief Program was intended for current residents or physicians during their first seven years of practice post-residency. This incentive reimbursed physicians up to \$120,000 of tuition paid during medical school in return for a five-year ROS.
2. The Family Medicine Bursary (\$60,000) was another financial incentive available to residents who agreed to establish a family practice in Nova Scotia and required a three-year ROS commitment.
3. The Debt-Assistance Plan was another incentive for any new physician who had completed residency in the past 12 months. With this plan, eligible family doctors could receive \$45,000 in installments over three years, while eligible specialists could receive \$20,000 in installments over two years (28,29).
4. Funding is also available to support relocation (up to \$10,000 through the Relocation Allowance), to allow prospective physicians and their partner to visit one potential practice site in Nova Scotia through the Site Visit Program, as well as Locum Support administered by Medavie Blue Cross (28).

Over the past year, several changes have been made. These mainly involved consolidating the aforementioned financial incentives into a single ROS agreement. As of 2022, the following describes present incentives available in Nova Scotia:

1. The Return of Service (ROS) Agreement offers \$125,000 in return for 5 years of service for both family physician and specialist streams. Eligible areas of practice include all zones except Central Zone (with the exception of Eastern Shore and West Hants communities for the family physician stream). Only physicians with less than 10 years of independent practice or current Canadian residents-in-training may apply.



2. The Physician Tuition Relief Program, Family Medicine Bursary, and Debt-Assistance Plan are no longer available.
3. Relocation Allowance, the Site Visit Program, and Locum Support by Medavie Blue Cross remain available and unchanged.

Two years ago, DNS renegotiated the physician master agreement, and several changes are being implemented. Physicians will see an 8% increase in payment over the next four years, which would lead Nova Scotia from being the worst paid in the country (30) to being the highest paid in Atlantic Canada (14,15). Succession planning, where a new physician can overlap with a retiring physician when taking over a practice, has been placed on hold due to the pandemic but was added to the master agreement as something to be implemented in the future (14,15). Another project placed on hold due to the pandemic is the pilot project for a new blended capitation payment model, which has been implemented in New Brunswick (14,15).

As evidenced by the current financial incentives, many are targeted towards family physicians. In the past few years, Nova Scotia has gradually shifted towards recruiting more family doctors (31), especially to rural areas of Nova Scotia. The community resource for physician recruitment toolkit (32), the Culture Innovation Fund: Healthy Communities Stream (33–35), the DNS Community Physician Hospitality Fund (36,37), and increasing establishment of Community Navigator positions (38,39) are only a snapshot of efforts within the past 3 years designed to formalize and encourage communities to engage in proactive physician recruitment. The two community funds through the Healthy Communities Stream and DNS offer communities financial support in engaging with prospective physicians. Funds can be used to host dinners, purchase welcome packages, cover community tours and activities, etc. The Culture Innovation Fund: Healthy Communities Stream specifically offers two tiers of funding. Tier 1 covers local initiatives up to \$10,000 and tier 2 covers larger, multi-community/partner collaborations for up to \$25,000 (33). The DNS Community Physician Hospitality Fund offers up to \$5,000 per grant for a maximum of 10 hospitality grants and requires involvement of one or more physicians in the recruitment initiative (36). As of 2021, applications remain open for the DNS grants.

To encourage diversity, the community resource for physician recruitment toolkit (32) advises communities to promote diversity training to community members because physicians have commented on not feeling accepted or understood sometimes within their new community. However, additional work needs to be done to appropriately address the systemic barriers to long-term recruitment and retention of physicians from diverse backgrounds.



PRACTICING PHYSICIAN	
GENERAL OUTREACH	<ul style="list-style-type: none"> • Social Media Promotion • More than Medicine+ Website • Job Fairs • Information Sessions • Networking • NSH Recruitment Consultants • NSH Physician Advisors • DNS Physician Advisory Team
FINANCIAL INCENTIVES	<ul style="list-style-type: none"> • ROS Agreement (5-year ROS, \$125,000) • Site Visit Program • Relocation Allowance • Locum Support
RURAL RECRUITMENT	<ul style="list-style-type: none"> • Community Navigators • Informal Community Outreach • Community-led Recruitment Funding (Culture Innovation Fund: Healthy Communities Stream and DNS Community Physician Hospitality Fund) • Community Recruitment & Retention Committees
DIVERSITY PROMOTION	<ul style="list-style-type: none"> • N/A
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none"> • Extended health & dental
GOVERNMENT CHANGES	<ul style="list-style-type: none"> • +8% Increased Pay • Future Succession Planning • Future Pilot of Blended Capitation Model • New Office of Health Care Professionals Recruitment

Input from Stakeholders and Future Directions

Nova Scotia Health (NSH) was interested in sponsoring additional welcome supplies for Nova Scotia medical students. Currently, Nova Scotia students receive a Littmann stethoscope, tuning forks, reflex hammer, measuring tape, pupil light, and visual acuity card at the beginning of their first year. NSH is open to receiving feedback from students on additional tools/items they would be interested in receiving. Furthermore, NSH is increasing their presence and recruitment efforts towards medical learners and would like feedback on how they can improve and provide support. They would like to know when students would prefer NSH to start engaging with them. At present, NSH aims to begin connecting during clerkship, but were wondering if students would be interested in interacting with their organization earlier.

Doctors Nova Scotia (DNS) stated that they are encouraged with recent recruitment efforts, which appear to be going in the right direction with implementation of the new Office of Health



Care Professionals Recruitment within the Department of Health & Wellness, the hiring of Community Navigators and a Physician Recruitment Consultant, increased involvement of community groups, collaborations, and new programs and funding. DNS is looking forward to collaborating with NSH and the new office to improve the recruitment process and overall experience for new and/or new to Nova Scotia physicians.

Recommendations

The implementation of the new Office of Health Care Professionals Recruitment, emergence of Community Navigators, and individual community efforts to attract and retain physicians in the province are promising steps. The increased focus on improving connections with medical learners in the Nova Scotia recruitment and retention strategic plan is also very encouraging.

1. **Communication:** There have been many changes in recent years including the implementation of the new office, Community Navigators, Physician Recruitment Consultant-Medical Learners, and more. Informing medical learners of these new contacts, resources and changes will be important towards improving connections and engagement with this cohort of prospective physicians.
2. **Rural Accessibility:** Medical learners would likely appreciate being made aware of economical living arrangements and perhaps assistance/access to transportation for rural rotations to encourage students to look beyond Halifax when considering clerkship opportunities. Financial limitations and general lack of awareness of options can be significant deterrents for rural exposure.
3. **Medical Student Registry:** Both New Brunswick and PEI have registries for medical students interested in practicing in the province. These registries can be helpful in collecting information about students who study outside of Dalhousie Medical School who may want to return to their respective provinces to practice once completing their education elsewhere. Employment opportunities, events, and recruitment updates are sent through these registries. Nova Scotia has yet to implement such a registry and may consider doing so in the future.
4. **Medical Student Survey & Representation:** Future work will need to involve surveying the medical student population on their expectations



and opinions on recruitment and retention strategies. Additionally, student representation on committees during the formation of recruitment and retention strategies may be valuable for providing student perspectives on plans targeting their cohort.



References

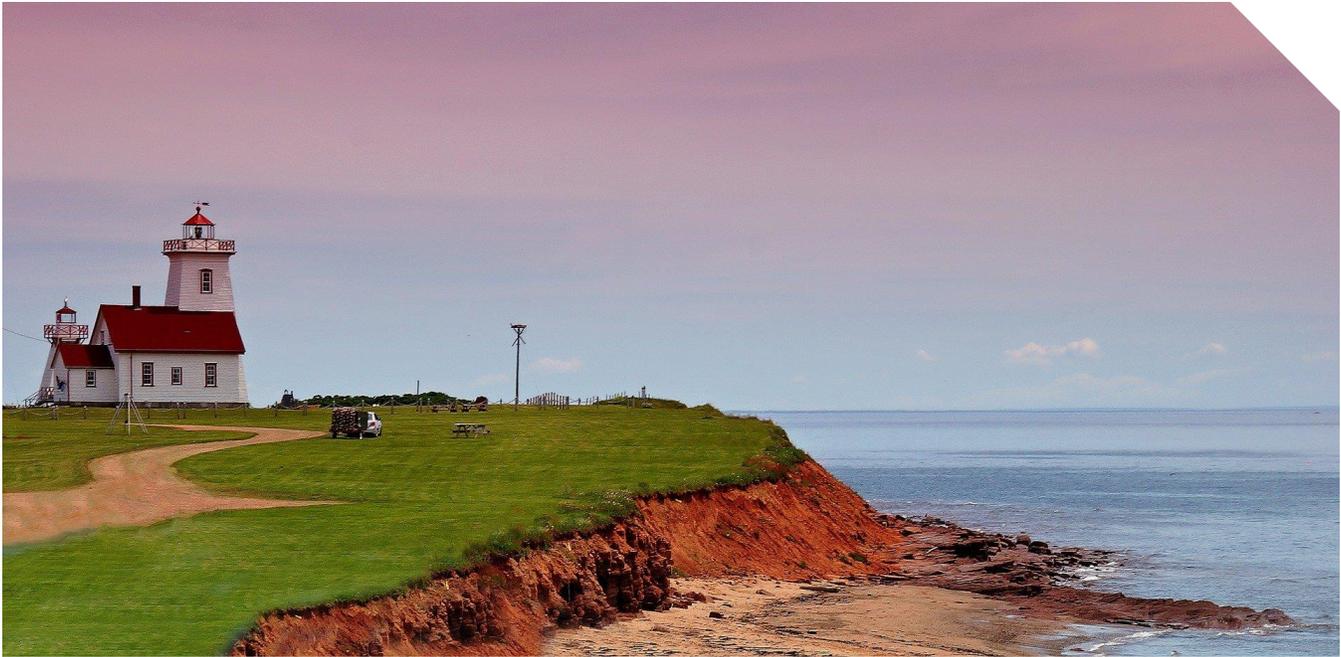
1. Nova Scotia Health. Finding a Primary Care Provider in Nova Scotia – November 2021 [Internet]. Reports, Statistics and Accountability. 2021. Available from: <http://www.nshealth.ca/reports-statistics-and-accountability>
2. Nova Scotia Health. Finding a Primary Care Provider in Nova Scotia – Jul 2020 [Internet]. Reports, Statistics and Accountability. 2020. Available from: https://www.nshealth.ca/sites/nshealth.ca/files/finding_a_primary_care_provider_in_nova_scotia_report_july_2020.pdf
3. Nova Scotia Health. Physician Recruitment Strategy 2017-2018 [Internet]. 2017. Available from: http://www.nshealth.ca/sites/nshealth.ca/files/recruitment_strategy_2017-18.pdf
4. Colley SB. Dalhousie medical school struggling to attract black and Indigenous students. CBC News [Internet]. 2017; Available from: <https://www.cbc.ca/news/canada/nova-scotia/dalhousie-medical-indigenous-students-african-nova-scotian-1.4202954>
5. Grant DA, Casey M, Doyle-Bedwell P, Hall B, Hanson MD, Hutt L, et al. Dalhousie Admissions Review Recommendations August 25, 2016 [Internet]. 2016. Available from: <https://cpsns.ns.ca/wp-content/uploads/2017/10/Dalhousie-Admissions-Review-Recommendations-August-25-2016.pdf>
6. Dalhousie University: Global Health Office. Indigenous Health: Mentorship & Academic Support [Internet]. [cited 2021 May 1]. Available from: <https://medicine.dal.ca/departments/core-units/global-health/diversity/indigenous-health/indigenous-mentorship.html>
7. Ray C. Dalhousie program works to attract Indigenous students to health professions. CBC News [Internet]. 2018; Available from: <https://www.cbc.ca/news/canada/nova-scotia/indigenous-students-health-professions-dalhousie-university-1.4578068>
8. Dalhousie University: Global Health Office. Support for Black students aspiring to a career in health [Internet]. [cited 2021 May 1]. Available from: <https://medicine.dal.ca/departments/core-units/global-health/diversity/plans.html>
9. Bosco C, Oandasan I. Review of Family Medicine Within Rural and Remote Canada: Education, Practice, and Policy [Internet]. College of Family Physicians of Canada. 2016. Available from: https://portal.cfpc.ca/resourcesdocs/uploadedFiles/Publications/News_Releases/News_Items/ARFM_BackgroundPaper_Eng_WEB_FINAL.pdf
10. Kapadia RK, McGrath BM. Medical school strategies to increase recruitment of rural-oriented physicians: the Canadian experience. *Can J Rural Med*. 2011;16(1):13.
11. The Mentoring Plus Strategy [Internet]. [cited 2021 May 1]. Available from: <https://www.mentoringplus.ca/>
12. Nova Scotia Government. Sixteen New Seats at Dalhousie Medical School. Health and Wellness / Labour and Advanced Education [Internet]. 2019; Available from: <https://novascotia.ca/news/release/?id=20190808001>
13. Palmetier P. Community navigator makes progress in effort to bring more doctors to Yarmouth area. CBC News [Internet]. 2021; Available from: <https://www.cbc.ca/news/canada/nova-scotia/community-navigator-making-progress-in-yarmouth-doctor-shortage-1.5942397>



14. Doctors Nova Scotia. Master Agreement [Internet]. 2020 [cited 2021 May 1]. Available from: <https://doctorsns.com/contract-and-support/master-agreement>
15. Gorman M. Doctors and Nova Scotia government reach new contract agreement. CBC News [Internet]. 2019; Available from: <https://www.cbc.ca/news/canada/nova-scotia/doctors-health-care-labour-negotiations-contract-government-1.5374927>
16. Dalhousie University. Longitudinal Integrated Clerkship Dalhousie (LICD): Clerkship in rural communities [Internet]. 2019 [cited 2021 May 1]. Available from: <https://medicine.dal.ca/departments/core-units/DMNB/education/LICD.html>
17. Watson-Creed G, Dhara A, Martin C, Asprey H, Mopoho C, Upshaw S-A, et al. Recommendations: Equity Diversity and Inclusion Sub Committee, Undergraduate Curriculum Refresh 2021. 2021; Available from: [https://cdn.dal.ca/content/dam/dalhousie/pdf/faculty/medicine/FacultyandStaff/Recommendations EDI working group AOSC.pdf](https://cdn.dal.ca/content/dam/dalhousie/pdf/faculty/medicine/FacultyandStaff/Recommendations%20EDI%20working%20group%20AOSC.pdf)
18. Ray C. Nova Scotia adds 10 residency spaces for medical students Social Sharing. CBC News [Internet]. 2018; Available from: <https://www.cbc.ca/news/canada/nova-scotia/n-s-increasing-residency-spaces-for-medical-students-1.4741484>
19. Nova Scotia Government. New Specialist Residency Spaces. Health and Wellness [Internet]. 2018; Available from: <https://novascotia.ca/news/release/?id=20180912001>
20. CaRMS. Nova Scotia, New Brunswick and Prince Edward Island Salary [Internet]. 2021 [cited 2021 Dec 20]. Available from: <https://www.carms.ca/match/r-1-main-residency-match/salary/#1511458863974-fa393f80-6acd>
21. Doctors Nova Scotia. Medical Students and Residents [Internet]. [cited 2021 Aug 2]. Available from: <https://doctorsns.com/doctors/med-students-residents>
22. Dalhousie University. Training the next generation of Family Physicians [Internet]. [cited 2022 Jan 1]. Available from: <https://medicine.dal.ca/departments/core-units/postgraduate/programs/family-medicine.html>
23. Nova Scotia Government. Office Finding Innovative Solutions for Healthcare Recruitment. Health and Wellness [Internet]. 2021; Available from: <https://novascotia.ca/news/release/?id=20211118005>
24. McKinley S. It's a bidding war for Canada health workers. Here's how Nova Scotia is trying to win. Toronto Star [Internet]. 2021; Available from: <https://www.thestar.com/news/canada/2021/12/16/its-a-bidding-war-for-canada-health-workers-heres-how-nova-scotia-is-trying-to-win.html>
25. Nova Scotia Health. More Than Medicine+ [Internet]. [cited 2021 Aug 3]. Available from: <https://recruitment.nshealth.ca/>
26. Doctors Nova Scotia. Physician Advisory Team [Internet]. [cited 2022 Jan 1]. Available from: <https://doctorsns.com/contract-and-support/advisory-team>
27. Fairclough I. New committee forms to sell mid-Valley area to potential doctors. Saltwire [Internet]. 2021; Available from: <https://www.saltwire.com/atlantic-canada/news/new-committee-forms-to-sell-mid-valley-area-to-potential-doctors-100582210/>
28. Nova Scotia Health. Incentives [Internet]. [cited 2020 Jun 27 and 2022 May 01]. Available from: <https://recruitment.nshealth.ca/incentives>
29. Nova Scotia Government. Physician Incentive Program Changes Add Flexibility, Choice. Health and Wellness [Internet]. 2018; Available from: <https://novascotia.ca/news/release/?id=20180417002>



30. Gorman M. “Why would you come?” Nova Scotia family doctors the worst paid in the country. CBC News [Internet]. 2018; Available from: <https://www.cbc.ca/news/canada/nova-scotia/family-doctors-health-care-the-search-pay-models-1.4520132>
31. Nova Scotia Health. Physician Recruitment Reporting [Internet]. Reports, Statistics and Accountability. 2020 [cited 2021 Aug 2]. Available from: <http://www.nshealth.ca/reports-statistics-and-accountability>
32. Nova Scotia Health. All Hands: A community resource for physician recruitment in Nova Scotia. 2020; Available from: <https://recruitment.nshealth.ca/toolkit>
33. Government NS. Culture Innovation Fund: Healthy Communities Stream [Internet]. [cited 2021 Aug 3]. Available from: <https://novascotia.ca/culture-innovation-fund-healthy-communities/>
34. Nova Scotia Government. Supporting Community Efforts in Doctor Recruitment and Retention in Antigonish. Communities, Culture and Heritage [Internet]. 2019; Available from: <https://novascotia.ca/news/release/?id=20191104001>
35. Nova Scotia Government. Supporting Community Efforts in Doctor Recruitment and Retention in Lunenburg County. Communities, Culture and Heritage [Internet]. 2019; Available from: <https://novascotia.ca/news/release/?id=20191107002>
36. Scotia DN. Community Physician Hospitality Fund [Internet]. [cited 2021 Aug 3]. Available from: <https://doctorsns.com/contract-and-support/advisory-team/community-physician-hospitality-fund>
37. Ray C. Doctors Nova Scotia tackles physician recruitment with new fund. CBC News [Internet]. 2019; Available from: <https://www.cbc.ca/news/canada/nova-scotia/doctors-nova-scotia-physician-recruitment-new-fund-1.5214051>
38. Ray C. Yarmouth eyes new community navigator to help with doctor recruitment. CBC News [Internet]. 2019; Available from: <https://www.cbc.ca/news/canada/nova-scotia/yarmouth-area-eyes-dedicated-housing-and-employee-to-help-recruit-doctors-1.5176023>
39. Palmetter P. Antigonish area to hire community navigator to support doctor recruitment. CBC News [Internet]. 2020; Available from: <https://www.cbc.ca/news/canada/nova-scotia/antigonish-nova-scotia-community-navigator-new-doctors-1.5756611>



PRINCE EDWARD ISLAND

Introduction

Prince Edward Island (PEI) is Canada's smallest province, measuring 224 km long with over 1100 km of shoreline, making it a picturesque destination. PEI's population is estimated at 165 000 at the end of 2021 (1) and has been continuously increasing along with the economy since 2008 (2). At the start of 2022, there were over 21,000 people on PEI's patient registry for a primary care provider, making up approximately 7.7% of the population in need of a family physician or nurse practitioner (3). This number may be even higher as patients are required to apply to the registry, creating potential for patients to be without a primary care provider and not on the list to find a replacement.

Health PEI is the organization responsible for the delivery of publicly funded health services in Prince Edward Island. The organization operates hospitals, health centres, public long-term care nursing facilities and community-based programs and services. Health PEI was formed with a goal of providing islanders with the right care, by the right provider, in the right place (4). Health PEI is accountable to the Provincial Minister of Health and Wellness and works in collaboration with the Medical Society of PEI (MSPEI) for physician recruitment and retention efforts (4). With an ever-evolving healthcare landscape, Health PEI announced a new leadership structure in 2021 to put more effort into expanding healthcare services, improving coordination, and providing consistent physician leadership (5). At a similar time, MSPEI announced the creation of a Chief Physician Recruiter position, to serve as the primary contact for prospective physicians interested in working in PEI with the Department of Health and



Wellness (6). Representatives from the Department of Health and Wellness and Health PEI Medical Affairs division were interviewed for this review, with representation from MSPEI being contacted for additional comment.

Recruitment & Retention

Physician recruitment and retention initiatives in PEI are a collaborative effort between the Department of Health and Wellness, Health PEI, MSPEI, local communities, and practicing physicians (7). The following have been identified as key stakeholders in the recruitment and retention process:

1. Rebecca Gill, Director of Health Recruitment, Department of Health and Wellness
2. Lauren Kelly Weyman, Manager of Physician Services - Family Medicine, Health PEI
3. Nadine MacLean, Manager of Physician Services – Specialty Medicine, Health PEI
4. Amanda Savoie, Human Resources Manager, Health PEI
5. Dr. Megan Miller, Chief Physician Recruiter, MSPEI

PEI is active in adapting recruitment and retention strategies, aiming for an innovative and evidence informed strategy to keep up with the competitive nature of recruitment throughout Canada, with a strong belief that it is imperative for recruitment and retention to work together (8). The current recruitment and retention strategies for PEI have been recently redefined with the addition of the MSPEI Chief Physician Recruiter and new Health PEI leadership in January 2021. A focus of this work is engaging physicians practicing on the Island to aid with recruitment and retention efforts (8, 9). It is hoped that this increased engagement will foster a transparent and trusting relationship between the Department of Health and Wellness, Health PEI, MSPEI and practicing physicians (9).

The Medical Affairs division within Health PEI is responsible for the delivery of physician services across the Island, and part of the mandate includes working with partners to identify and fill physician positions, and supporting physicians who are working on the Island, whereas the Health Recruitment team within the Department of Health and Wellness and MSPEI works collaboratively to implement recruitment strategies to promote Health PEI opportunities and engage with recruitment prospects (9). With the addition of the Chief Physician Recruiter in 2021, there is now a physician contact for prospective physicians wishing to practice medicine in PEI to help provide firsthand insight into the logistics and realities of the medical experience in PEI.

The Recruitment team aims to make connections with physician prospects early in their career development and maintain these connections throughout all stages of training (8), with a focus on social media campaigns and testimonials from local physicians. In person and virtual initiatives are also pursued, including presentations at medical schools and residency programs across Canada.

As part of the recruitment strategy, PEI is promoting new developments including a new primary care road map, which involves collaborative primary care practices (Medical Homes and Neighbourhoods) and a new provincial Electronic Medical Record (EMR) (7).



The Department of Health and Wellness is undertaking the development of a Clinical Services Plan, which is proposed to be delivered in the Fall of 2022. The project is in the initiation phase and it will provide PEI with a forecasting tool for key program areas needs including physicians, nurses, and select allied health professionals based on health system needs. Using a 10-year rolling forecasting tool, it will outline the clinical services model and provide a staffing mix to suit the model, which can be adjusted to meet evolving health system requirements. (10)

The Recruitment Team PEI aims to address recruitment at every stage of medical training, from pre-medical school to practice. PEI is actively learning from other provinces, frequently completing jurisdictional scans to determine strategies that may be applicable for PEI. This technique helps to inform how PEI plans and responds to the competitive nature of recruitment and retention (8). While many initiatives are targeted towards multiple aspects of training, some activities are geared towards specific stages, which are discussed below.

Pre-Medical School

The Health Care Futures Program is offered by the Government of Prince Edward Island for students interested in careers in the healthcare sector, with the intention to provide additional exposure to this field. The Health Care Future Programs hires post-secondary, and grade 12 students, with interest in healthcare, with separate routes available for nursing students. Multiple sites are available, including long term care facilities, community care facilities, clinics, hospitals, the Health PEI head office, and the Department of Health and Wellness (11). Students work alongside a health professional in these settings to gain work experience and exposure to healthcare professions (12).

At the time of this review, there were up to eleven medical school seats reserved for PEI residents. Dalhousie University Faculty of Medicine located in Nova Scotia holds 6 seats for PEI residents. Memorial University Faculty of Medicine in Newfoundland holds 4 seats for PEI residents. The Université de Sherbrooke Faculty of Medicine and Health Sciences in Quebec holds 1 seat (7, 8). Pre-Medical Students from PEI are also encouraged to apply to schools across Canada, as well as other schools internationally.

In 2021, Health PEI agreed to participate in the Widening Accessibility Stream of Dalhousie's Medical Admissions process for one PEI seat. This stream is meant to widen accessibility to medical education to broad and diverse populations, including underrepresented populations and individuals who encounter significant barriers in their pursuit of medical education (10). The new medical school at UPEI in collaboration with Memorial University of Newfoundland will initially have one seat reserved for an Indigenous student from PEI starting in 2023 (13).



PRE-MEDICAL SCHOOL	
GENERAL OUTREACH	<ul style="list-style-type: none">• Social Media Promotion• Information Sessions
FINANCIAL INCENTIVES	<ul style="list-style-type: none">• Scholarships, bursaries
RURAL RECRUITMENT	<ul style="list-style-type: none">• N/A
DIVERSITY PROMOTION	<ul style="list-style-type: none">• N/A
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none">• Health Care Futures Program• Reserved medical student seats in three Canadian medical schools

Medical School

Medical students attending Dalhousie University and Memorial University of Newfoundland have opportunities to complete rotations in PEI during pre-clerkship, as well as specific core rotations in clerkship. While many rotations are completed in Charlottetown, numerous communities host medical students for Family Medicine and Community Visit rotations. Medical students across Canada can complete a variety of clerkship rotations in PEI during elective rotations, which are available through the AFMC Student Portal (14).

During medical school, students have multiple funding opportunities available. PEI Medical Students receive a \$500 book allowance in their second and third years of study and have licensure fees covered by Health PEI (7). Both Dalhousie University and Memorial University have scholarships and bursaries available to medical students, however there are no PEI specific scholarships. PEI medical students are also part of the “Black Bag Program” and receive a stethoscope, reflex hammer, tuning forks, flashlight, and other medical tools to help start their career in medicine from the Medical Society of PEI (7).

The Government of Prince Edward Island also provides financial support to medical students and residents through loans and bursaries with the goal of encouraging new physicians to establish their practice in PEI (15).

The Family Medicine Sponsorship Program is a program of the Department of Health and Wellness to aid in recruitment of physicians directly from medical school (16). Medical students who wish to pursue Family Medicine will receive \$80,000 divided over three years, starting in their fourth year of medical education, through signing a Return of Service agreement for a five-year commitment to work in an underserved area (7, 16).



MEDICAL SCHOOL	
GENERAL OUTREACH	<ul style="list-style-type: none">• Social Media• Information sessions and presentations• Networking events and dinners• Chief Physician Recruiter and members of Recruitment & Retention Team
FINANCIAL INCENTIVES	<ul style="list-style-type: none">• Book Allowance (\$500 in 2nd & 3rd year)• Scholarships, bursaries• Family Medicine Sponsorship Program (\$80,000 divided over three years)
RURAL RECRUITMENT	<ul style="list-style-type: none">• Opportunities for placement on PEI during pre-clerkship placements and clerkship rotations.
DIVERSITY PROMOTION	<ul style="list-style-type: none">• Starting in 2022 1 seat at Dalhousie University through the Widening Accessibility Stream• Starting in 2023 1 seat at UPEI/MUN medical school for an Indigenous Student.
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none">• Black Bag Program (stethoscope, reflex hammer, tuning forks, flashlight, and other medical tools)• MSPEI licensure fees covered• Reserved medical student seats in three Canadian medical schools

Residency

The recruitment strategies outlined for residents are similar to those mentioned above for medical students, with rotations in PEI being available for multiple programs.

Dalhousie University Family Medicine Residency Program has a site in PEI with five residency spots in each of the 2 years of training (7, 8). This Residency Program is based between two main sites, Charlottetown and Summerside (17). Currently there are four spots which have been reserved for Canadian Medical Graduates (CMGs) and one spot for International Medical Graduates (IMGs) (18).



RESIDENCY	
GENERAL OUTREACH	<ul style="list-style-type: none">• Social Media• Information sessions and presentations• Networking events and dinners• Chief Physician Recruiter and members of Recruitment & Retention Team
FINANCIAL INCENTIVES	<ul style="list-style-type: none">• Family Medicine Sponsorship Program (\$80,000 divided over three years)• Highest Resident Gross Salary in Canada
RURAL RECRUITMENT	<ul style="list-style-type: none">• Informal Community Outreach• Rural Rotations• Community Navigators
DIVERSITY PROMOTION	<ul style="list-style-type: none">• Ability to practice with Francophone and Indigenous Communities
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none">• Focus placed on orientation, mentorship, and community support for new physicians.

Practicing Physicians

PEI offers Return of Service (ROS) grants and strives to ensure competitive incentives are being offered. PEI ROS are typically 3–5-year contracts in installments. Another incentive to accompany this is Moving Reimbursements for prospective physicians (7, 8).

PEI aims to ensure new physicians are being supported for success, with targeted focus placed on orientation, mentorship, and community support for new physicians (8, 9). There is an emphasis on promoting integration of work and lifestyle within the recruitment and retention strategy (8). Recruitment focuses on individualized strategies to meet the needs of incoming physicians. The small size of PEI promotes flexibility of recruitment practices to allow Health PEI to work with individual physicians in meeting their interests (7, 8, 9).

Novel strategies to integrate physicians into the PEI healthcare system are continuously explored to address physician burnout and increasing demands of larger patient loads (8). Due to the small geographical size of PEI, physicians in PEI can have significant opportunities within leadership roles (9), leading Health PEI to invest in leadership training and physician engagement strategies (9). Health PEI’s goal is that increased physician engagement on committees and in decision making will increase transparency and communication with regards to recruitment and retention (9). In January 2020 PEI signed an agreement with MSPEI to adopt a “Physicians’ Recruiting Physicians” model (19), which led to the hiring of the first MSPEI Chief Physician Recruiter, Dr. Megan Miller, in January 2021 for a two-year term (20). This model will assess best recruitment practices in other jurisdictions nationally and internationally (19), make personal connections with prospective candidates, and raise PEI’s recruitment profile in the region (20).



The Recruitment and Retention Secretariat offers spousal employment support for physicians coming to work in PEI. This includes helping to create networks and connections for the spouse in their specific area of interest and training. The Recruitment team also works with Community Navigators to help provide guidance on educational pathways for children, childcare options, recreational activities, and housing supports (10).

Currently, if a physician expresses an interest in working with specific Indigenous or Francophone populations, Health PEI will consider and attempt to meet this interest (8).

PRACTICING PHYSICIANS	
GENERAL OUTREACH	<ul style="list-style-type: none"> • Social Media • Information sessions and presentations • Networking events and dinners • Chief Physician Recruiter and members of Recruitment & Retention Team • Community Navigators
FINANCIAL INCENTIVES	<ul style="list-style-type: none"> • Return of Service Agreements (variable funding based on specialty) • Moving Reimbursements (up to \$10,000)
RURAL RECRUITMENT	<ul style="list-style-type: none"> • Family Medicine Sponsorship Program recruits participants for five years in an area of greatest need. • Community Navigators
DIVERSITY PROMOTION	<ul style="list-style-type: none"> • N/A
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none"> • Focus placed on orientation, mentorship, and community support for new physicians • Spousal Employment support to create connections in specific areas of interest and training • Community Navigators to provide guidance on housing, childcare, and educational pathways

Input from Stakeholders and Future Directions

A challenge identified by the Recruitment and Retention team is the inability to access contact information of medical school attendance freely and openly due to privacy restrictions of medical programs (7, 8). To counter this challenge, the Recruitment and Retention team launched an opt-in medical student and resident registration form in 2020 to create a list of current medical students and residents who have an interest in learning more about opportunities in PEI (21). The Recruitment and Retention team plans to use this information to make stronger connections with medical students and residents (8). Currently, it is crucial for the Recruitment and Retention team to attend conferences and provide presentations at



medical schools to form relationships and connections with medical students and residents (8).

A formal survey of medical students from PEI has not been completed, however a common theme in informal discussions included PEI medical students wanting stronger connections, as well as a voice at the table, during discussions with MSPEI. This theme has been echoed at both Memorial and Dalhousie, where the MUN Medical Students' Society has representation on the Newfoundland and Labrador Medical Association (NLMA), and the Dalhousie Medical Students' Society has representation on Doctors Nova Scotia (DNS), however a PEI equivalent with the Medical Society of Prince Edward Island (MSPEI) does not exist. A formal survey of medical students from PEI could help determine if this is a direction students would like to pursue.

The announcement of a medical school at UPEI in collaboration with Memorial University of Newfoundland (13) will initially provide 20 seats for medical students from PEI, including 1 seat reserved for an indigenous student, starting in 2023. At the time of the compilation of this report, additional details are not yet available; as this process unfolds and further details are released, it will likely have implications for physician recruitment and retention efforts in PEI.

Recommendations

1. Continue to promote the **Medical Student and Resident Registration Form** to gather information about individuals hoping to practice medicine in PEI. Utilize this information to actively engage prospective future physicians and colleagues interested in PEI.
2. Create **formal representation** for PEI medical students with the Medical Society of Prince Edward Island to promote increased engagement and transfer of information.
3. Perform a formal **survey of PEI medical students and residents** on current recruitment and retention strategies, local engagement, and initiatives.



References

1. The Government of Prince Edward Island. PEI Population Report Quarterly [Internet]. [place unknown]: The Government of Prince Edward Island; 2021 [cited 2021 Dec 17]. Available from: <https://www.princeedwardisland.ca/en/information/finance/pei-population-report-quarterly>
2. The Government of Prince Edward Island. Island Geography [Internet]. [place unknown]: The Government of Prince Edward Island; 2015 [cited 2021 Oct 16]. Available from: <https://www.princeedwardisland.ca/en/information/conseil-executif/island-geography>
3. The Government of Prince Edward Island. Patient Registry Program [Internet]. [place unknown]: The Government of Prince Edward Island; 2022 [cited 2022 Jan 10]. Available from: <https://www.princeedwardisland.ca/en/information/health-pei/patient-registry-program>
4. The Government of Prince Edward Island. Health PEI [Internet]. [place unknown]: The Government of Prince Edward Island; 2021 [cited 2021 Oct 16]. Available from: <https://www.princeedwardisland.ca/en/topic/health-pei>
5. The Government of Prince Edward Island. HealthPEI Announces New Leadership Structure [Internet]. [place unknown]: The Government of Prince Edward Island; 2021 [cited 2021 Oct 16]. Available from: <https://www.princeedwardisland.ca/en/news/health-pei-announces-new-leadership-structure>
6. The Government of Prince Edward Island. Physicians Recruiting Physicians Model will Strengthen the Recruitment and Retention Process [Internet]. [place unknown]: The Government of Prince Edward Island; 2020 [cited 2021 Oct 16]. Available from: <https://www.princeedwardisland.ca/en/news/physicians-recruiting-physicians-initiative-will-strengthen-recruitment-and-retention-process>
7. Gill R. & Scott G. CFMS Atlantic Task Force discussion on Physician Recruitment and Retention in PEI. [Personal Interview, 22 Apr] Virtual; 2021 (unpublished).
8. Gill, R. CFMS Atlantic Task Force discussion on Physician Recruitment and Retention with Department of Health and Wellness Director of Health Recruitment. [Personal Interview] Virtual; 2020 (unpublished).
9. Weyman LK. CFMS Atlantic Task Force Discussion on Physician Recruitment and Retention with Health PEI Manager Physician Services - Family Medicine. [Personal Interview] Virtual; 2021 (unpublished).
10. Gill R, MacLean N, & Weyman LK. CFMS Atlantic Task Force Discussion on Physician Recruitment and Retention in PEI. [Personal Interview, Nov 18] Virtual; 2021 (unpublished).
11. The Government of Prince Edward Island. Health Care Futures / Nursing Student Summer Employment Work Sites [Internet]. [place unknown]: The Government of Prince Edward Island; 2019 [cited 2021 Oct 16]. Available from: <https://www.princeedwardisland.ca/en/information/health-and-wellness/health-care-futuresnursing-student-summer-employment-work-sites>
12. The Government of Prince Edward Island. Health Care Futures Program [Internet]. [place unknown]: The Government of Prince Edward Island; 2021 [cited 2021 Oct 16]. Available from: <https://www.princeedwardisland.ca/en/service/health-care-futures-program>



13. Chang A. UPEI creating medical school 'co-degree' in partnership with Memorial University. CBC News [Internet]. 2021 Oct 8 [cited 2021 Oct 16]. Available from: <https://www.cbc.ca/news/canada/prince-edward-island/pei-upei-medical-school-announcement-1.6204768>
14. The Association of Faculties of Medicine of Canada. AFMC Student Portal [Internet]. [place unknown]: The Association of Faculties of Medicine of Canada; 2021 [cited 2021 Oct 16]. Available from: <https://www.afmcstudentportal.ca>
15. The Government of Prince Edward Island. Apply for a Student Loan and Check your Student Loan Status [Internet]. [place unknown]: The Government of Prince Edward Island; 2021 [cited 2021 Oct 16]. Available from: <https://www.princeedwardisland.ca/en/service/apply-for-a-student-loan-and-check-your-student-loan-status>
16. The Government of Prince Edward Island. Family Medicine Sponsorship Program [Internet]. [place unknown]: The Government of Prince Edward Island; 2020 [cited 2021 Oct 16]. Available from: <https://www.princeedwardisland.ca/en/information/health-and-wellness/family-medicine-sponsorship-program>
17. Dalhousie Family Medicine. Prince Edward Island Teaching Site Program [Internet]. [Halifax (NS)]: Dalhousie Family Medicine; 2021 [cited 2021 Oct 16]. Available from: <https://medicine.dal.ca/departments/department-sites/family/education/teaching-sites/prince-edward-island/program.html>
18. Canadian Resident Matching Service. CaRMS Program Descriptions [Internet]. [Ottawa (ON)]: Canadian Resident Matching Service; 2021 [cited 2021 Oct 16]. Available from: <https://www.carms.ca/match/r-1-main-residency-match/program-descriptions/>
19. Medical Society of Prince Edward Island. Medical Society to Recommend New Physician Recruitment Model [Internet]. [Stratford (PE)]: Medical Society of Prince Edward Island; 2020 [cited 2021 Oct 16]. Available from: <https://www.mspei.org/news/medical-society-to-recommend-new-physician-recruitment-model/>
20. Medical Society of Prince Edward Island. Chief Physician Recruiter Hired [Internet]. [Stratford (PE)]: Medical Society of Prince Edward Island; 2021 [cited 2021 Oct 16]. Available from: <https://www.mspei.org/news/chief-physician-recruiter-hired-for-pei/>
21. The Government of Prince Edward Island. Medical Student and Medical Resident Registration [Internet]. [place unknown]: The Government of Prince Edward Island; 2021 [cited 2021 Oct 16]. Available from: <https://www.princeedwardisland.ca/en/service/medical-student-and-medical-resident-registration>



NEWFOUNDLAND AND LABRADOR

Introduction

Newfoundland and Labrador (NL) is Canada's most eastern province and is divided into 4 regional health authorities. NL has the fastest aging population in the country. By 2038, it is predicted that more than one-third of the population will be over the age of 65 (1). Additionally, NL has the highest incidence of chronic disease in Canada, thus resulting in massive strain on the healthcare system (2). With these current challenges, there is a corresponding increase in demand for healthcare services, making the recruitment and retention of physicians of high priority to the future of healthcare in the province.

In 2018, the Newfoundland and Labrador Medical Association (NLMA) in partnership with the Memorial University Faculty of Medicine and the Newfoundland and Labrador College of Family Physicians outlined a plan to combat these issues in “**Family Medicine in Newfoundland and Labrador – A Ten Year Vision**” (3). As a priority, the aim of recruitment and retention of physicians is to improve access to healthcare particularly in rural and remote communities. Similarly, as with the general population, the physician workforce in NL is aging. The percentage of family physicians over the age of 65 in NL has increased from 8% to 14% since 2012 (3). As these physicians approach retirement, the risk of many patients in NL losing access to a family physician, and therefore unable to access primary healthcare, is of increasing concern to the provincial health authorities. In 2018, 10% of the population (roughly 50 000 people) did not have a regular family physician, and this number is likely to grow (3).



In 2021, the College of Physicians and Surgeons of Newfoundland and Labrador (CPSNL), collaborated with recruiters, municipal representatives, and physicians (4) to develop actionable strategies to improve the current provincial recruitment and retention initiatives.

The following section describes current physician recruitment methods and highlights suggestions for future avenues using conversations recorded with physician recruiters, discussions at recruitment and retention workshops held by CPSNL, and publicly accessible information.

Barriers and Opportunities: A Reflection on Recruitment & Retention in NL

In Newfoundland & Labrador, each of the four health authorities has its own physician recruiter. This group meets on a regular basis to discuss the problems they are facing and possible solutions. Due to the immediate challenges and demands of filling the current gaps in the system, short-term strategies have historically been prioritized over long-term strategies for recruitment. Currently, International Medical Graduates (IMG) are a staple in the recruitment strategy in NL. While there are other efforts and incentives that are in place, more coordinated, sustainable strategies are necessary in order to ensure current healthcare needs are met while allowing for resource investment into long-term strategies.

In accordance with the findings of interviews with recruitment professionals, the **Rural Newfoundland and Labrador Physician Recruitment and Retention Plan** highlights the opportunities, challenges, and risks associated with recruitment and retention initiatives in an attempt to refocus efforts on the implementation of strategic recommendations. This was a report prepared by the Faculty of Medicine at Memorial University as a summary of an online retreat on rural recruitment and retention in Newfoundland. The retreat was attended by 80 individuals and multiple stakeholder groups, including government, regional health authorities, regulatory bodies, the NLMA, physicians, the Faculty of Medicine, and learners (4).

From the standpoint of medical education, the presence of a 'hidden curriculum' imposes an implicit bias on medical students to believe that specialist training is superior to generalist training, primarily due to potential income (4). Medical students incur significant debt upon completion of their training, which falsely incentivizes them to pursue specialised training. (4). Addressing the 'hidden curriculum' and inviting more generalists to engage with medical training will serve to interrupt the perception of specialist superiority.

As previously stated, the province currently relies heavily on IMGs to replenish the pool of family physicians; however, IMGs frequently leave the province once residency training is completed (4). As the Faculty of Medicine at Memorial University reserves a specific number of seats for international students, there is currently no set number of seats reserved for students from rural areas in Newfoundland & Labrador (4). The lack of dedicated seats makes it difficult to verify if students are truly from rural areas through the application review process (4). Although, screening medical school applications based on their geographic origin may not result in return of service to rural, it may also be beneficial for medical schools to screen applicants based on their intention to provide service to rural areas



Newfoundland and Labrador lack a province-wide human resources plan, which has the potential to lead to employee burnout (4). Physician recruiters have no choice but to focus on the current family physician crisis, and they may fail to follow-up after initial recruitment conversations, insinuating to potential physicians that there is no active, pressing need for recruitment (4). The lack of an integrated provincial plan, combined with a lack of consistent communication between physicians and recruiters, is concerning and does not bode well for retaining more physicians in NL.

The **Rural Newfoundland and Labrador Physician Recruitment and Retention Plan** makes numerous recommendations for improving current recruitment and retention systems, with a focus on the need to re-invent compensation models for rural physicians (4). Due to location, patient complexity, and disparate workloads, many physicians no longer fit the traditional fee-for-service model. The fee-for-service model incentivizes physicians to see more patients more quickly, which can reduce quality of care and patient satisfaction (4). Furthermore, geriatric patients frequently constitute the majority of rural populations, resulting in physicians managing complex, chronic conditions and time-consuming clinic visits.

The fee-for-service model is no longer a sustainable, attractive compensation model for many rural physicians. The **Plan** identifies the potential of exploring a blended capitation model as a primary opportunity to “provide a salary for fixed time/number of patients, an on-call stipend, and patient treatment, especially when dealing with complex medical situations” in an effort to replace the fee-for-service model (4). The blended capitation model is an exciting opportunity for many physicians which will likely enhance physician well being and satisfaction with their practice, however, in order to implement such a model all physicians will need to have access to an Electronic Medical Record (EMR). Currently, the majority of rural physicians do not use or have access to an EMR, which must be considered before attempting to implement such a compensation plan (4).

Pre-Medical School

There are 57 of 80 seats at Memorial University reserved for Newfoundland residents (5). High school students in Newfoundland have the opportunity to explore medical careers through MedQuest, a summer program run by Memorial University (6). Unfortunately, in person sessions have been canceled due to the COVID-19 pandemic, but efforts have been made to host events virtually to high school students (7). Future plans regarding whether this program will continue virtually are not currently readily available. Additionally, there are currently no targeted strategies aimed at students from rural backgrounds prior to medical school. This is an area that should be researched further in the future.

The Faculty of Medicine at Memorial University currently reserves 3-4 seats per year for Indigenous students (5). Since Reserves in Newfoundland and Labrador are governed by the Federal Government, they have their own distinct recruitment and retention strategies.



PRE-MEDICAL SCHOOL	
GENERAL OUTREACH	<ul style="list-style-type: none">• Social Media Promotion
FINANCIAL INCENTIVES	<ul style="list-style-type: none">• Scholarships, bursaries
RURAL RECRUITMENT	<ul style="list-style-type: none">• N/A
DIVERSITY PROMOTION	<ul style="list-style-type: none">• N/A•
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none">• MedQuest Summer Program• 57 reserved medical student seats at Memorial University for Newfoundland residents.

Medical School

At the beginning of medical school, Recruiters from Eastern Health attend a general orientation day to establish relationships with students. Recruiters also attend career days to engage with students. Students in years 1-3 of medical school have the opportunity to participate in distributed learning at rural community placements. At these sites, municipal recruitment working groups led by communities that collaborate with the RHA host social events for clerks and residents interested in the area.

Outside of academics, the Rural Medicine Interest Group (RMIG) Annual Conference is available for students to attend. It includes sessions on provincial health needs as well as question and answer sessions for attendees to interact with rural family physicians. Financially, there is an Undergraduate Medical Student Bursary Program that offers \$7500 for a 1-year return of service contract (8).



MEDICAL SCHOOL	
GENERAL OUTREACH	<ul style="list-style-type: none">• Regional Health Authority Recruiters attend general orientation and career days for medical students.
FINANCIAL INCENTIVES	<ul style="list-style-type: none">• Undergraduate Medical Student Bursary Program valued at \$7500 for a 1-year return of service contract• Scholarships, bursaries
RURAL RECRUITMENT	<ul style="list-style-type: none">• Medical students in years 1-3 complete rural medicine placements• Municipal Recruitment Working Groups Informal Community Outreach
DIVERSITY PROMOTION	<ul style="list-style-type: none">• N/A
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none">• Rural Medicine Interest Group (RMIG) Annual Conference

Residency

Recruiters attend resident core content days to establish relationships with residents through physician panels, social events and activities, and connecting residents with government officials from the Department of Health. Municipal recruitment working groups also host social events meant to target resident recruitment. Residents in their final two years of training can apply for a Provincial Bursary Program for Medical Residents. For a 3-year return on investment, this has a value ranging from \$25,000 to \$90,000, with an increasing amount for increasing rurality. This bursary can be cut in half with a 1.5-year return-of-service agreement (8).



RESIDENCY	
GENERAL OUTREACH	<ul style="list-style-type: none">Regional Health Authority Recruitments attend resident core content days, panels, social events, and activities.
FINANCIAL INCENTIVES	<ul style="list-style-type: none">Provincial Bursary Program for Medical Residents completing their final two years of training.3-year return on investment ranging from \$25,000 - \$90,000 with amounts increasing based on rurality.
RURAL RECRUITMENT	<ul style="list-style-type: none">Municipal Recruiters host social events for residents.
DIVERSITY PROMOTION	<ul style="list-style-type: none">N/A
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none">Option to cut 3-year return on investment to 1.5-year return on investment.

Practicing Physicians

Current post-residency strategies for recruiting and retaining physicians are primarily monetary in nature. Annual retention bonuses, for example, vary depending on payment model (salary vs. fee-for-service), specialty, location, and length of service (i.e. 12, 24, or 36 months). Reimbursements exist in terms of relocation expenses and CMPA fees. Fee-for-service family physicians working in rural Regional Health Authority health centre clinics have very low overhead costs (\$2400 per month is the provincial recommendation). Housing may also be subsidised (low rent, around \$500 per month, including utilities and internet). Except for Central Health, all RHAs offer services such as Up-to-Date subscriptions.



PRACTICING PHYSICIANS	
GENERAL OUTREACH	<ul style="list-style-type: none"> • N/A
FINANCIAL INCENTIVES	<ul style="list-style-type: none"> • Annual retention bonuses • Relocation and CMPA fee reimbursements • Up-to-Date Subscriptions in all RHAs with the exception of Central Health
RURAL RECRUITMENT	<ul style="list-style-type: none"> • N/A
DIVERSITY PROMOTION	<ul style="list-style-type: none"> • N/A
UNIQUE PROGRAMS / BENEFITS	<ul style="list-style-type: none"> • Low overhead costs in rural areas • Potential for subsidized housing

Input from Stakeholders and Future Directions

The Rural Newfoundland and Labrador Physician Recruitment and Retention Plan (4) provides recommendations that are summarized here.

Considerations for recruitment should start before medical school. For instance, seats may be allocated specifically for those intending to practice rurally, having previous rural experiences, or having other features that predict future rural practice (4).

RHAs could work to foster more personal relationships between medical students. For example, personalized communication from the site chief of the student's local Regional Health Authority can be sent, with a special emphasis at the end of year 2, just before the start of clerkship. Lunch and Learn sessions with students may be helpful to raise awareness of practice opportunities for students as they progress in career exploration. Early and frequent exposure to rural sites, generalist practice, rural role models, and career counseling around practice locations in addition to specialty selection may be beneficial (4). There is room to develop financial incentives, such as return of service agreements. Material resources and orientation packages from various communities can be used to highlight the unique aspects of a rural lifestyle such as hiking, fishing, or hunting (4).

Recruiters can individualize meetings with residents in rural areas to help residents settle in the rural area, including the use of resource kits/orientation packages to highlight rural lifestyle within that community. Efforts should consider the needs of the physician's partner and/or family and devise strategies to meet those needs (4, 9). Having consistent signing bonuses across the province may also remove barriers for recruitment (4).



Similarly, these efforts can be used to recruit and retain physicians post-residency. Firstly, the application process for postgraduates and IMGs who want to work in rural areas should be simple and accessible. In addition, creating a provincial locum pool may allow physicians adequate time away from their practices if needed (4). The integration of technology into rural practice can be improved to reduce professional isolation and allow for easier access to consultations with specialists (4). Connection may also be maintained through a provincial mentoring program to reduce feelings of isolation. Mechanisms for continuous feedback, such as through exit interviews with physicians who decide to leave their rural practice to pursue a different career path, can further dictate future directions (4).

Overall, more work is needed to enhance the recruitment and retention strategy in Newfoundland. Creation of a provincial Physician Human Resources Workforce Plan should outline current needs (type of physician needed and location) as well as projections of future needs (4). Clarification of the unique roles of the Recruitment Officer and Retention Officer in each Regional Health Authority will help guide implementation of programming. In addition to recruiting rural physicians, support (including financial support) must be available to encourage rural physicians to contribute to medical education and mentor the next generation of physicians (4).

Recommendations

1. Identify **research areas** and **establish project ideas** to attract physicians, residents, and medical students to rural areas.
2. Create **opportunities** for medical students from other provinces to complete placements in rural Newfoundland & Labrador during their training.
3. Create **summer research programs** or **shadowing opportunities** for medical students from across Canada in rural areas of Newfoundland & Labrador.
4. Create a **platform for students** to share their thoughts on rural healthcare sites and experiences.
5. Incorporate questions about the desire to return to rural areas in Newfoundland and Labrador into **medical school interviews**. For instance:
 - What are three things that would be important to you as a physician if you worked in a rural area?
 - If given the chance, where would you like to work as a physician in NL, and why?



In summary, new Payment Models, Collaboration with Government, and a Physician Human Resource Plan are the three main recruitment and retention strategies being explored in Newfoundland and Labrador. Information and resources about different recruitment and retention initiatives for NL are challenging to locate through publicly accessible channels, such as online websites. Improving coordination at all levels of career development is not only required to achieve better recruitment outcomes, interested individuals must also be able to independently and easily locate this information. Moving forward, we recommend a collaborative approach among regional health authorities and other relevant stakeholders to implement the aforementioned suggestions and ensure that these resources are readily accessible by learners and staff physicians.



References

1. Statistics Canada. (2013). Section 3 - Results at the provincial and territorial levels, 2013 to 2038. Retrieved from <https://www150.statcan.gc.ca/n1/pub/91-520-x/2014001/section03-eng.htm>
2. Lukewich, J., Buote, R., Asghari, S., Aubrey-Bassler, K., Knight, J., & Mathews, M. (2020). Adults with diabetes mellitus in Newfoundland and Labrador: a population-based, cross-sectional analysis. *CMAJ open*, 8(4), 895.
3. Newfoundland & Labrador College of Family Physicians (2018). Family medicine in Newfoundland & Labrador: A ten year vision [PDF File]. Retrieved from <https://nl.cfpc.ca/ten-year-vision/>
4. Faculty of Medicine Memorial University. Rural Newfoundland & Labrador physician recruitment and retention plan. St. John's (Newfoundland): Memorial University; 2021. 25 p.
5. Memorial University Faculty of Medicine. Admissions [Internet]. Newfoundland (Canada): MUN; 2021. Available from: <https://www.med.mun.ca/Admissions/ApplicationEvaluationCompetitions.aspx>
6. Memorial University Faculty of Medicine. The Office of Learner Well-Being and Success [Internet]. Newfoundland (Canada): MUN. Available from: <https://www.med.mun.ca/medquest/>
7. VOCM. MUN Hosting Virtual MedQuest [Internet]. Newfoundland (Canada): VOCM; 2021. Available from: <https://vocm.com/2021/08/29/mun-hosting-virtual-medquest/?fbclid=IwAR1rqSrOI2-t4P95r2MnVNKBma5sdD5N6fpRA5XRWrVoGVJuf8F-MI8N9HA>
8. Newfoundland and Labrador Health and Community Services. Bursaries / Incentives [Internet]. Newfoundland (Canada): Newfoundland and Labrador Health and Community Services; 2020. Available from: <https://www.gov.nl.ca/hcs/grantsfunding/bursaries/>
9. Canadian Broadcasting Corporation. Whose doctor shortage? Like many other physicians before me, I'm leaving [Internet]. Newfoundland (Canada): CBC; 2021. Available from: https://www.cbc.ca/amp/1.6179376?__twitter_impression=true&fbclid=IwAR3VUqhAs2cz_6vkP4Q_ewfuUENTJ7CwHhDwOupxS_fhskM3LowbmvBVbPs