

Recruiting rural youth to healthcare careers: a scoping review protocol

Recrutement de jeunes ruraux pour des carrières en soins de santé : un protocole de révision de la portée

Kristin Bodell,¹ Trina M Fyfe,¹ Sean B Maurice^{1,2}

¹Northern Medical Program, Division of Medical Sciences, University of Northern British Columbia, British Columbia, Canada; ²Department of Cellular & Physiological Sciences, Faculty of Medicine, University of British Columbia, British Columbia, Canada

Correspondence to: Sean B Maurice; email: Sean.Maurice@unbc.ca

Published ahead of issue: Jun 6, 2023; published: Sept 8, 2023. CMEJ 2023, 14(4) Available at <https://doi.org/10.36834/cmej.76269>

© 2023 Bodell, Fyfe, Maurice; licensee Synergies Partners. This is an Open Journal Systems article distributed under the terms of the Creative Commons Attribution License. (<https://creativecommons.org/licenses/by-nc-nd/4.0>) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is cited.

Introduction

There are fewer healthcare practitioners per capita in rural regions compared to urban regions across the world. Currently, 17.8% of Canada's population live rurally but only 7.6% of Canada's physicians work to serve the rural population.^{1,2} Shortages of healthcare workers can lead to increased incidence of chronic disease, increased medication consumption and shorter life expectancy.³⁻⁵ Conversely, evidence has shown that health outcomes are improved with increased availability of healthcare workers.³ The World Health Organization and the Society of Rural Physicians of Canada (SRPC) both call for targeted strategies to recruit healthcare trainees who have an affinity and suitability for rural practice.^{3,6} The current accreditation standards for Canadian medical schools emphasizes the social accountability mandate: that medical schools must address the priority health concerns of the populations it has a responsibility to serve⁷, which includes ensuring that the 17.8% of the population who live rurally, have equitable access to medical care. One of the best ways to ensure equitable care in rural regions is to focus on training health care providers who are likely to choose rural practice.

Rural youth are in many ways well suited to careers in rural healthcare, but they are less likely to consider healthcare careers. If rural youth decide to pursue a healthcare career, they will face barriers along their journey that their urban counterparts do not. These barriers include education

disadvantages through inadequate subject choices and opportunities, financial difficulties that come from social isolation and separation from their families during training, along with many other barriers.⁸ The SRPC makes several recommendations for supporting rural youth to pursue medical careers, emphasizing the complexity of the barriers these youth face, across the journey from high school to practice.⁹ Rural backgrounds or rural experiences during training are good predictors of returning to rural places to work.¹⁰⁻¹⁶ Therefore, efforts to sustain the rural health workforce, must focus on targeting youth in rural areas, as they are more likely than their urban counterparts to return to a rural community to work and also need more assistance in order to overcome the many barriers in between them and a healthcare career.^{14,15,17,18}

The aim of the proposed scoping review is to map the existing evidence on initiatives to recruit rural youth to healthcare careers, summarize the results of the included studies, and identify gaps to inform future research.

Methods

We have chosen to conduct a scoping review because it is unclear what is known about interventions to increase rural youth pursuing healthcare careers, and what sort of evidence exists. This review is needed to map the evidence that exists, to advise future initiatives and to inform future research priorities in the area. Consistent with recent recommendations on improving the quality of scoping reviews, we are defining and publishing criteria for our

review *a priori*.^{19,20} In conducting our scoping review, we will follow the six stages recommended by Arksey and O'Malley,²¹ as expanded upon by Levac et al.,²² and with further guidance from Tricco et al.,²³ and Aromataris and Munn.²⁴ This protocol has been registered with the Open Science Framework database (<https://doi.org/10.17605/OSF.IO/NBHQG>).

We employed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis for protocols (PRISMA-P) 2015 statement²⁵ to guide our reporting of this scoping review protocol, with additional guidance from the PRISMA-ScR checklist (available upon request).²³

This scoping review will utilize the Population, Concept, and Context (PCC) framework to determine the eligibility of the primary research question, as suggested.²⁴ Population = rural youth (generally high school students, ages ~12-19, but will also include relevant programs focused on younger ages); Concept = Any programs or interventions that are being utilized to increase the odds that rural youth choose to pursue healthcare career training; Context = interventions targeting youth in rural and remote locations, including comparative studies with urban components. There is debate about how to define rurality, with many different definitions used²⁶ and while some definitions regard a town of 10,000 as rural, Statistics Canada defines rural as something less than a population centre of 1000.²⁷ As the purpose of a scoping review is to search widely to clarify what is known on a topic, the authors will accept broad definitions of rural, recognizing that there are large differences between the many different rural, remote, northern, and Indigenous communities around the world. Likewise, Indigenous people may live in rural/remote Indigenous communities, in primarily non-Indigenous rural/remote communities, or in urban settings. Our data extraction will include description of the study context, and if studies can be categorized by definition of rural/remote context, and/or by description of rural/remote Indigenous youth focus, this information will be summarized in the review.

A research librarian (TMF) will conduct a comprehensive search of multiple databases to identify relevant studies and initiatives aimed at recruiting rural youth into healthcare careers. A provisional search strategy for Medline OVID was developed and peer-reviewed by a librarian using the PRESS Guidelines (Table 1).²⁸ The following academic databases will be searched (from inception onwards): MEDLINE OVID, Web of Science, CINAHL EBSCO, PsychINFO EBSCO, ERIC EBSCO and

EMBASE OVID for health literature. We will hand search relevant journals not indexed in the above: Canadian Medical Education Journal, Journal of Research in Rural Education, Journal of Rural Studies. References of all papers meeting inclusion criteria will be reviewed for additional papers that have not been identified. Citations of papers that meet inclusion criteria will be reviewed for additional papers that have not been identified with Web of Science. Targeted gray literature searches will also be undertaken and articles meeting our inclusion criteria will be included, regardless of publication type.

Two authors (KB and SBM) will independently extract information relevant to the aims of the proposed scoping review. These data will be organized in data extraction forms in Covidence (www.covidence.org), customized to suit our purposes (available upon request). We will use a narrative approach to report the findings and if warranted, we will use the model of Harden and Thomas to combine methods, reporting qualitative and quantitative syntheses separately, before a combined synthesis.²⁹ The authors will perform a consultation exercise of the initial report of the scoping review, with experts in the field, to ensure the review will be of value to the community, with both pragmatic recommendations for future rural youth healthcare career initiatives, and clearly identified gaps in current research and to inform opportunities for future research.

Discussion

It is currently unclear what literature exists on initiatives to recruit rural youth into healthcare training, or what evidence of efficacy has been published. This review will map the existing initiatives and evidence, and also allow us to identify areas where further research is needed. Understanding how different groups have (or have not) measured efficacy of their initiatives, in light of the often long and varied training pathways involved, is important for the community to understand, as we collectively work to build the rural health workforce.

Table 1. Database(s): Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Daily and Versions(R) 1946 to present.

#	Searches
1	Education, Medical, Undergraduate/
2	exp Health Personnel/ed [Education]
3	exp Health Occupations/ed [Education]
4	exp education, dental/ or exp education, nursing/ or exp education, pharmacy/ or education, public health professional/
5	(education adj3 (nursing or nurse* or allied or health or medical or dental or pharma* or physio* or physical or occupational or speech)).ti,ab.
6	exp Schools, Health Occupations/
7	1 or 2 or 3 or 4 or 5 or 6
8	pathway*.ti,ab.
9	(outreach adj3 (program* or model* or initiative*)).ti,ab.
10	(engagement or mentor*).ti,ab.
11	((job or career) adj1 (fair* or event*)).ti,ab.
12	(pipeline adj3 program*).ti,ab.
13	Mentors/
14	(exposure* adj3 (event* or education or opportunit* or awareness or initiative* or intervention* or program* or model*)).ti,ab.
15	((education or learning or school*) adj3 (exposure* or intervention* or program* or strateg* or model*)).ti,ab.
16	(communit* adj3 (exposure* or intervention* or program* or strateg* or model* or engagement)).ti,ab.
17	8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16
18	exp Rural Health Services/
19	Medically Underserved Area/
20	Rural Population/
21	Rural Health/
22	(rural or remote or northern).ti,ab.
23	18 or 19 or 20 or 21 or 22
24	(youth or teen* or adolescen* or young adult).ti,ab.
25	((secondary or high) adj1 (school* or education)).ti,ab.
26	adolescent/ or young adult/
27	24 or 25 or 26
28	7 and 17 and 23 and 27
29	limit 28 to english language

Acknowledgements: We would like to thank Mathew Vis-Dunbar, Southern Medical Program Librarian, University of British Columbia Okanagan, for peer-reviewing the initial Medline OVID search strategy.

Conflict of Interest: The authors declare that they have no conflicts of interest.

Funding: No funding.

Registration: Open Science Framework:
<https://doi.org/10.17605/OSF.IO/NBHQG>

References

- Canadian Institute for Health Information. *Supply, distribution and migration of physicians in Canada*, 2020. Ottawa, ON. 2021. <https://secure.cihi.ca/estore/productSeries.htm?pc=PCC34>
- Statistics Canada. Population growth in Canada's rural areas, 2016 to 2021. Ottawa, ON. 2022. <https://www12.statcan.gc.ca/census->

- <recensement/2021/as-sa/98-200-x/2021002/98-200-x2021002-eng.cfm>
- World Health Organization. *Global Policy Recommendation: increasing access to health workers in remote and rural areas through improved retention*. 2010. <https://www.who.int/publications/i/item/increasing-access-to-health-workers-in-remote-and-rural-areas-through-improved-retention> [Accessed on Apr 6, 2023].
- Cinnamon J, Schuurman N, Crooks VA. A method to determine spatial access to specialized palliative care services using GIS. *BMC Health Serv Res*. 2008;8:140. <https://doi.org/10.1186/1472-6963-8-140>
- Shah TI, Clark AF, Seabrook JA, Sibbald S, Gilliland JA. Geographic accessibility to primary care providers: Comparing rural and urban areas in Southwestern Ontario. *Can Geogr*. 2020;64(1):65-78. <https://doi.org/10.1111/cag.12557>
- Advancing rural family medicine: the Canadian Collaborative Taskforce. *The Rural Road Map for Action – Directions*. Mississauga, ON: Advancing Rural Family Medicine: The Canadian Collaborative Taskforce; 2017. <https://www.cfpc.ca/CFPC/media/Resources/Rural-Practice/Rural-Road-Map-Directions-ENG.pdf>
- Committee on Accreditation of Canadian Medical Schools (CACMS). *Standards for accreditation of medical education programs leading to the M.D. Degree*, 2021. Standard 1.1.1. https://cacms-cafmc.ca/wp-content/uploads/2022/12/CACMS_Standards_and_Elements_A_Y_2022-2023.pdf [Accessed on Apr 6, 2023].
- Edmunds M, Harris M. Challenges to student transition in allied health undergraduate education in the Australian rural and remote context: a synthesis of barriers and enablers. *Rural Remote Health*. 2015;15(2):3069. <https://doi.org/10.22605/RRH3069>
- 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;172(1):62-65. <https://doi.org/10.1503/cmaj.1040879>
- Henry JA, Edwards BJ, Crotty B. Why do medical graduates choose rural careers? *Rural Remote Health*. 2009;9(1):1083. <https://doi.org/10.22605/RRH1083>
- Koebisch SH, Rix J, Holmes MM. Recruitment and retention of healthcare professionals in rural Canada: a systematic review. *Can J Rural Med*. 2020;25(2):67-78. https://doi.org/10.4103/cjrm.cjrm_43_19
- Carson DB, Schoo A, Berggren P. The 'rural pipeline' and retention of rural health professionals in Europe's northern peripheries. *Health Policy*. 2015;119(12):1550-1556. <https://doi.org/10.1016/j.healthpol.2015.08.001>
- Daniels ZM, Vanleit BJ, Skipper BJ, Sanders ML, Rhyne RL. Factors in recruiting and retaining health professionals for rural practice. *J Rural Health*. 2007;23(1):62-71. <https://doi.org/10.1111/j.1748-0361.2006.00069.x>
- McGrail MR, O'Sullivan BG, Russell DJ. Rural training pathways: the return rate of doctors to work in the same region as their basic medical training. *Hum Resour Health*. 2018;16(1):56. <https://doi.org/10.1186/s12960-018-0323-7>
- Kwan MMS, Kondalsamy-Chennakesavan S, Ranmuthugala G, Toombs MR, Nicholson GC. The rural pipeline to longer-term rural practice: general practitioners and specialists. *PLoS ONE*. 2017;12(7):e0180394. <https://doi.org/10.1371/journal.pone.0180394>

16. Farmer J, Kenny A, McKinstry C, Huysmans RD. A scoping review of the association between rural medical education and rural practice location. *Hum Resour Health*. 2015;13:27. <https://doi.org/10.1186/s12960-015-0017-3>
17. 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.
18. Lovato CY, Hsu HCH, Bates J, Casiro O, Towle A, Snadden D. The regional medical campus model and rural family medicine practice in British Columbia: a retrospective longitudinal cohort study. *CMAJ Open*. 2019;7(2):E415-E420. <https://doi.org/10.9778/cmajo.20180205>
19. Pham MT, Rajić A, Greig JD, Sargeant JM, Papadopoulos A, McEwern SA. A scoping review of scoping reviews: advancing the approach and enhancing the consistency. *Res Synth Methods*. 2014;5(4):371-385. <https://doi.org/10.1002/jrsm.1123>
20. Tricco AC, Lillie E, Zarin W, et al. A scoping review on the conduct and reporting of scoping reviews. *BMC Med Res Methodol*. 2016;16:15. <https://doi.org/10.1186/s12874-016-0116-4>
21. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol*. 2005;8(1):19-32. <https://doi.org/10.1080/1364557032000119616>
22. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implementation Sci*. 2010;5(5):69. <https://doi.org/10.1186/1748-5908-5-69>
23. Tricco AC, Lillie E, Zarin W, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med*. 2018(169):467-473. <https://doi.org/10.7326/m18-0850>
24. Aromataris E, Munn Z. JBI Manual for evidence synthesis. *JBI*, 2020. <https://doi.org/10.46658/JBIMES-20-01>
25. Moher D, Shamseer L, Clarke M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Syst Rev*. 2015;4(1). <https://doi.org/10.1186/2046-4053-4-1>
26. Danek R, Blackburn J, Greene M, Mazurenko O, Menachemi N. Measuring rurality in health services research: a scoping review. *BMC Health Serv Res*. 2022;22(1):1340. <https://doi.org/10.1186/s12913-022-08678-9>
27. Statistics Canada. Distribution of population by size of population centre, 2016 and 2021 censuses. Table 1.7; 2022. Available: https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/tab/index-eng.cfm?ID=t1_7
28. McGowan J, Sampson M, Salzwedel DM, Cogo E, Foerster V, Lefebvre C. PRESS peer review of electronic search strategies: 2015 guideline statement. *J Clin Epidemiol*. 2016;75:40-46. <https://doi.org/10.1016/j.jclinepi.2016.01.021>
29. Harden A, Thomas J. Methodological issues in combining diverse study types in systematic reviews. *Int J Soc Res Methodol*. 2005;3(8):257-71. <https://doi.org/10.1080/13645570500155078>