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Article abstract

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## Supported rural pre-medicine: a descriptive evaluation of a novel undergraduate program's first cohorts

Au soutien de la pré-médecine rurale : évaluation descriptive des premières cohortes d'un programme de doctorat de premier cycle inédit

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### Implication Statement

Selkirk College's Rural Pre-Medicine (RPM) program launched in 2014 as a unique undergraduate initiative designed to increase the number of students who prepare for future careers in rural healthcare and, in the longterm, to play a role in reducing rural health disparities. Preliminary evaluation indicates most students in the program have rural backgrounds and the majority of graduates with follow-up data go on to further health science programming, including medical school. Challenges with retention have been identified. RPM is committed to ongoing program improvement and to providing a model for similar programs in other jurisdictions.

### Énoncé des implications de la recherche

En 2014, le Collège Selkirk a lancé son programme de doctorat de premier cycle en pré-médecine rurale (PMR), une initiative unique visant à attirer davantage d'étudiants vers une carrière dans le domaine de la santé en milieu rural et, à long terme, à réduire les inégalités en matière de santé dans les zones rurales. L'évaluation préliminaire indique que la plupart des étudiants inscrits dans ce programme sont issus du milieu rural et que la majorité des diplômés pour lesquels des données étaient disponibles poursuivent leurs études en sciences de la santé, y compris en médecine. Des problèmes de rétention ont été mis en évidence. Le PMR s'inscrit dans une démarche d'amélioration continue et désire faire du programme un modèle à suivre ailleurs au Canada.

### Introduction

Health professionals with past rural exposure are more likely to practice rurally.<sup>1</sup> This knowledge has generated initiatives to reduce rural health disparities, such as distributed medical education models.<sup>2</sup> Rural Pre-Medicine (RPM) begins the process earlier by addressing barriers to pre-professional education faced by people from rural backgrounds.<sup>3,4</sup>

### Innovation

RPM has three components: 1) a 3-year, 90-credit academic curriculum; 2) non-academic programming to introduce students to rural health disparities, provide support for applications, and facilitate community service;

and 3) outreach to rural high schools. Up to 24 students are admitted in each cohort, based on references and non-academic and rurality statements in addition to transcripts, to support applications from rural and historically under-represented students. Students who complete the 3-year program receive an Advanced Diploma in Rural Pre-Medicine (ADRPM) and have the pre-requisites to apply to medicine and other professions such as dentistry, optometry and pharmacy.

To our knowledge, RPM is a novel innovation, particularly the non-academic component. Students receive substantive additional support, including regular one-on-one meetings with a program coordinator, facilitated connections with health professionals and community

organizations, interview training, a Medical College Admission Test (MCAT) preparatory course and review of professional school applications.

## Outcomes

We conducted a retrospective database review to describe RPM's first four cohorts, 2017-2020. The deidentified database includes intake data, courses and grades, program completion status and, when students have self-reported, post-program academic status. Analysis was conducted with Microsoft® Excel for Mac, version 16.41. The program evaluation was approved by Selkirk's Research Ethics Board.

Most applicants (157/192, 82%) were local West Kootenay residents (Table 1). Acceptance offers were made to almost half of applicants (92/192, 48%) and most (72/92, 78%) of those registered. Overall, 55/75, 73% of registrants were women, 37/75, 49% completed the 3-year ADRPM or 2-year Associate of Science Degree (AS) and 38/75, 51% completed neither. Post-program self-report data were available for 36 students, including 9 students who did not complete ADRPM or AS (non-completion data not shown in table for this group). Of those, 14 (14/36, 39%) reported enrollment in a health professional program or a health science-related degree, twelve (12/36, 33%)

reported being in medical school, and ten (10/36, 28%) pursued Other Academic paths.

## Future directions

RPM has enrolled students with mainly rural backgrounds, many of whom have gone on to health-related programs including medical school. Retention has been identified as an important challenge. Based on ongoing quality improvement initiatives, measures to aid retention are underway, including improved high school outreach and admissions process, additional student support, and expanded university transfer agreements emphasizing multiple pathways to careers in a variety of health professions. While published research to guide efforts is limited, the measures taken are backed by the results of a review of retention in nursing programs.<sup>5</sup>

Limitations with this evaluation include a small dataset, retrospective analysis and limited post-program data. Plans include stakeholder interviews, streamlining current quality improvement, and follow-up surveys to track career paths more accurately. RPM is well positioned to enable people with rural practice intentions to enter professional programs, provide a model for similar programs, and contribute downstream to improved rural health.

Table 1. Admissions, demographics, program completion and post-program summary data by cohort and full group

	Cohort (program entry year)				All students
	2017(2014)	2018 (2015)	2019(2016)	2020(2017)	
<b>Applications &amp; Admissions</b>					
# of applications	31	45	59	57	192
# of offers	21	13	32	26	92
# registrants	17	11	23*	21	72*
# (%) registrants West Kootenay	14 (82%)	9 (82%)	18 (78%)	18 (86%)	59 (82%)
# (%) registrants other BC	1 (6%)	2 (18%)	3 (13%)	3 (14%)	10 (14%)
# (%) registrants other provinces	2 (12%)	0 (0%)	2 (9%)	0 (0%)	4 (6%)
<b>Demographics</b>					
# of students	17	11	26*	21	75*
# (%) female	12 (71%)	7 (64%)	19 (73%)	17 (81%)	55 (73%)
# (%) male	5 (29%)	4 (36%)	7 (27%)	4 (19%)	20 (27%)
Av age (range)	21.1 (19-26)	22.5 (17-35)	22.3 (18-40)	19.5 (17-38)	20.7 (17-39)
1 <sup>st</sup> median GPA (range)**	3.17 (1.81-4.00)	3.15 (1.40-4.16)	3.71 (2.17-4.20)	3.93 (2.49-4.33)	3.61 (1.40-4.33)
<b>Program completion</b>					
ADRPM # (%)	8 (47%)	2 (18%)	8 (31%)	9 (43%)	27 (36%)
AS # (%)	3 (18%)	0 (0%)	4 (19%)	3 (14%)	10 (13%)
Incomplete # (%)	6 (35%)	9 (82%)	14 (50%)	9 (43%)	38 (51%)
<b>Post-program pathway n=36</b>					
# (%) medical school	4 (40%)	3 (60%)	3 (25%)	2 (11%)	12 (33%)
# (%) health prof prog	1 (10%)	0 (0%)	5 (42%)	1 (11%)	7 (19%)
# (%) health sci prog	4 (40%)	0 (0%)	3 (25%)	0 (0%)	7 (19%)
# (%) other academic	1 (10%)	2 (40%)	1 (8%)	6 (66%)	10 (28%)

#=number, %=per cent; \*two students more than admissions data transferred in program year 2, admissions data only reflects students who entered in September of Year 1; \*\*based on max of 4.0 for 2014, and max of 4.33 from 2015 forward; ADRPM = Advanced Diploma in Rural Pre-Medicine; AS = Associate of Science Degree; Incomplete = less than 2 years completed, no diploma awarded; health prof prog = health profession program; health sci prog= health sciences degree program; other prog = other program not health related.

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