

REVIEW ARTICLE

Characteristics, barriers and facilitators of initiatives to develop interprofessional collaboration in rural and remote primary healthcare facilities: a scoping review

AUTHORS



Dominique Perron¹ MA



Karrie Parent² BSc



Isabelle Gaboury³ PhD, Professor



Dave A Bergeron⁴ RN, PhD, Associate Professor *

CORRESPONDENCE

*Prof Dave A Bergeron dave_bergeron@uqar.ca

AFFILIATIONS

¹ Interdisciplinary Doctorate in Health and Society, Faculty of Human Sciences, Université du Québec à Montréal, 405 rue Sainte-Catherine Est, Montréal, Québec H2L 2C4, Canada; Centre de recherche du CISSS Chaudière-Appalaches, 143 rue Wolfe, Lévis, Québec G6V 3Z1, Canada; and Collectif de recherche sur la santé en région (CoRSeR), Université du Québec à Rimouski, 300 Allée des Ursulines, Rimouski, Québec G5L 3A1, Canada

² Faculty of Arts and Science, Bishop's University, 2600 rue College, Sherbrooke, Québec J1M 1Z7, Canada

³ Department of Family Medicine and Emergency Medicine, Faculty of Medicine and Health Sciences, Université de Sherbrooke, 150 place Charles-Le Moyne, Longueuil, Québec J4K 0A8, Canada

⁴ Centre de recherche du CISSS Chaudière-Appalaches, 143 rue Wolfe, Lévis, Québec G6V 3Z1, Canada; Collectif de recherche sur la santé en région (CoRSeR), Université du Québec à Rimouski, 300 Allée des Ursulines, Rimouski, Québec G5L 3A1, Canada; Department of Family Medicine and Emergency Medicine, Faculty of Medicine and Health Sciences, Université de Sherbrooke, 150 place Charles-Le Moyne, Longueuil, Québec J4K 0A8, Canada; and Department of Health Sciences, Université du Québec à Rimouski, 300 Allée des Ursulines, Rimouski, Québec G5L 3A1, Canada

PUBLISHED

1 November 2022 Volume 22 Issue 4

HISTORY

RECEIVED: 5 April 2022

REVISED: 29 August 2022

ACCEPTED: 3 September 2022

CITATION

ETHICS APPROVAL

Considering that it concerns a scoping review and that no patient was involved, this research has not received institutional review board approval.

This work is licensed under a [Creative Commons Attribution 4.0 International Licence](https://creativecommons.org/licenses/by/4.0/)

ABSTRACT:

Introduction: Despite strong evidence supporting interprofessional collaboration (IPC) and the documented need for collaborative practice in primary health care (PHC), initiatives to promote IPC in rural and remote PHC facilities have not been extensively studied. The purpose of this article is to map interprofessional education (IPE) and interprofessional practice (IPP) initiatives implemented to promote IPC in rural and remote PHC facilities, and identify barriers and facilitators to their implementation.

Methods: A scoping review was conducted. After two reviewers filtered titles and abstracts, 94 retained articles were subsequently screened. Finally, 23 articles were selected and analyzed using a directed content analysis approach in NVivo v12.

Results: Only 10 articles focused on the implementation of initiatives to improve IPC, while the majority reported barriers and

facilitators. The most common IPE initiatives were workshops, courses, discussion groups and simulations, while IPP initiatives fell into two main categories: clinical or technological tools. Limited human resources, understanding of roles, and knowledge of context as well as traditional roles, were identified as barriers. Team size, past experience and relationships, connection to community, flexibility and openness, and financial support were facilitators to developing IPC.

Conclusion: Deployment of IPC in rural and remote PHC facilities is critical given the various challenges faced in these clinical settings. The facilitators identified in this literature review are specific to rural and remote clinical settings and provide hope that new initiatives more tailored to rural and remote settings will be implemented and evaluated in the future to improve IPC and care delivery.

Keywords:

interprofessional collaboration, interprofessional education, interprofessional practice primary health care.

FULL ARTICLE:

Introduction

Compared to their urban counterparts, residents of rural areas present more often with multiple vulnerability factors, such as lower income and less formal education, and are less likely to exhibit healthy lifestyle behaviors. They also have higher rates of overall mortality, injury and poisoning, and chronic diseases such as cardiovascular disease and diabetes¹. Rural populations also experience more challenges in accessing primary health care (PHC) services than urban populations, partly because of travel distances but also because there are fewer health care professionals (including family physicians) in rural areas than in urban areas¹. They also face low retention rates of healthcare professionals and a lack of onsite specialists and other resources².

PHC increasingly depends on the contributions of multiple professionals³. However, health providers in PHC face enormous ideological, organizational, structural and relational challenges⁴, and the presence of different types of professionals in PHC teams alone is not sufficient to improve access⁵. The fact that different health professionals work together in a PHC setting does not automatically mean that interprofessional collaboration (IPC) exists. It is therefore essential to create supportive environments

for IPC and to encourage IPC behaviors in different environments⁶.

IPC is a process that occurs when at least two professionals with different areas of expertise share common goals that reflect the values of individuals and families, use effective and regular communication mechanisms, actively participate in the delivery of quality care and encourage shared decision-making to maximize healthcare delivery and individual outcomes⁷. IPC is an essential element of healthcare organization to enhance access to health care and to improve the health status of a population⁸, especially for those with complex and chronic conditions⁹. IPC and effective interprofessional teamwork are critical components of safe healthcare provision, as they can contribute to improved clinical performance and patient outcomes¹⁰⁻¹². Fostering IPC among health professionals working in rural and remote health centers can help overcome some of the unique challenges of PHC in these settings, thereby enhancing access to PHC and improving the health status of the populations living there.

Several scholars have undertaken reviews of interventions or initiatives to improve IPC among health professionals in different settings, including PHC facilities¹³⁻¹⁵, but no reviews have been conducted on interventions or initiatives in rural or remote PHC

facilities. Considering the importance of optimal IPC in rural and remote PHC services¹⁶, there is a need to identify initiatives to improve IPC in these healthcare facilities and the factors that either enhance or limit the implementation of these initiatives.

The main objective of this project was to map initiatives described in the scientific literature that were implemented to promote IPC in PHC facilities located in rural and remote areas. The secondary objective was to identify barriers and facilitators to the implementation of these initiatives. Two types of initiatives were researched: interprofessional education (IPE) and interprofessional practice (IPP) initiatives, as these have been identified in health care as playing an important role in improving healthcare services and patient outcomes¹⁷. As defined by Reeves et al, IPE initiatives occur when two or more professions learn interactively, whereas IPP initiatives are activities or procedures incorporated into regular practice¹⁸. Both are designed to improve IPC and the quality of care provided¹⁸.

Methods

A scoping review is a method of uncovering key concepts, types of evidence and gaps in the research of a specific field through the lens of an exploratory research question, and the subsequent systematic process of searching the literature, selecting relevant results and synthesizing existing evidence¹⁹. The framework developed by Arksey and O'Malley was used to organize this scoping review²⁰. Five of the six steps proposed by these authors were carried out: identification of research questions, identification of relevant articles, selection of articles, data extraction and analysis, and presentation of results²⁰.

A concept map and search strategy were developed, as detailed in Table 1, employing terms for each of the following three concepts: interprofessional collaboration, primary care, and rural or remote areas. The search strategy was validated by a health sciences librarian. The literature review was conducted in 2019 and updated in 2021 and 2022. Only articles published between 1999 and 2021 were considered. The databases consulted included Abstracts in Social Gerontology, Academic Search Complete, AMED, CINAHL, MEDLINE, SocINDEX and PsychINFO, and the search yielded 3085 articles after the removal of duplicates.

As detailed in Figure 1, these articles were screened using the following inclusion criteria: (1) the study explored characteristics, facilitators and/or barriers of collaborative practice or an initiative; (2) the initiative took place in a rural or remote area; and (3) PHC facilities were involved. In terms of exclusion criteria, literature reviews, commentaries, and theoretical or reflection articles were excluded. After the screening of titles and abstracts by two reviewers (KP and DAB), the full text of the 94 retained articles was subsequently screened using the same criteria, resulting in 23 articles, which were then analyzed using a directed content analysis approach²¹. NVivo v12 (QSR International; [http://www](http://www.nvivo.com)), a qualitative data analysis software, was used in the data extraction process to ensure greater rigor²². Co-coding was performed by three reviewers (DP, KP and DAB) and discussed as a group. The coding process followed the interprofessional framework developed by Reeves et al¹⁸, which defines the three main categories of interprofessional interventions (IPE, IPP and interprofessional organization) and specifies the types of interventions, objectives and outcomes for each category¹⁸.

Table 1: Concepts and related keywords for document search

Concept 1: IPC	Concept 2: PHC	Concept 3: Rural and remote context
Interprofessional collaboration	Primary health care	Rural region
Multidisciplinary partnership or practice	Emergency (treatment)	Isolated region
Health care team	Medical intervention	Remote area/region
Cooperation	Healthcare	Rural/remote community
Cooperative behaviour	Delivery of health care	Milieu
Interprofessional relations	Treatment	Location
Patient care team	Health services	Society
Group processes	Primary care providers	Locality
Organizational models	Primary provider team	Municipality
Interprofessional care	Frontline health service/care	Sector
Collaborative practice	Primary health service	Environment
Teamwork		Context

IPC, interprofessional collaboration; PHC, primary health care.

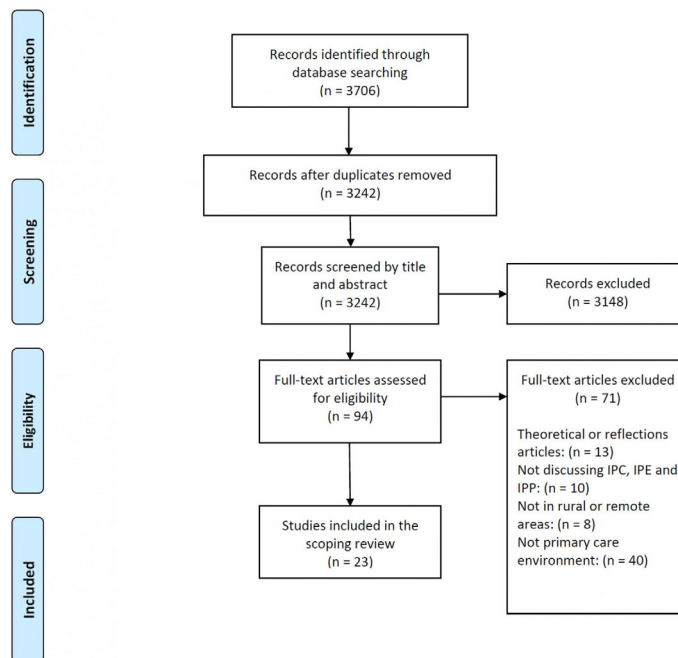


Figure 1: PRISMA flow diagram.

Results

Of the 23 selected articles, only 10 focused on the implementation of IPE and IPP initiatives to improve IPC in PHC facilities located in rural and remote areas, whereas 13 articles reported barriers and facilitators to the implementation of initiatives to improve IPC in existing contexts. IPE was discussed in five articles²³⁻²⁷, IPP was discussed in three articles²⁸⁻³⁰, and two studies discussed both IPE and IPP^{31,32}. Only one of the 10 initiatives identified was implemented in a remote PHC facility²⁸, whereas the others were implemented in rural PHC facilities.

Interprofessional education and interprofessional practice initiatives

Details of the IPE and IPP initiatives identified in rural and remote

PHC facilities are shown in Table 2. The most common IPE initiatives were workshops, courses (in-person or video-conference), discussion groups and simulations, while IPP initiatives fell into two main categories: clinical (manual, inventory, protocol, care model) or technological tools (video-conferencing system). For two initiatives^{24,32}, IPE activities were inspired by Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS), a validated training curriculum for teaching interprofessional communication to healthcare professionals³³. Initiatives were implemented in a variety of practice locations (PHC services, emergency, mental health, palliative care and home care), and the vast majority of professionals involved were physicians and nurses. The key IPC-related outcomes of IPE and IPP initiatives were clarification of professional roles, improved teamwork and improved IPC.

Table 2: Summary of articles describing interprofessional education and interprofessional practice initiatives implemented to improve interprofessional collaboration²³⁻³²

Authors	Country	Practice location	Number of sites	Type of research	Interventions	Professionals involved	IPC-related outcomes
Interprofessional education							
Bailey et al (2006) [ref. 23]	Canada	PHC services (rural)	4	Qualitative	Self-learning module Facilitated group discussions Follow-up contacts	Physicians Nurse practitioners	Clarification of professional roles Improvement in IPC
Gum et al (2020) [ref. 24]	Australia	Hospitals (rural)	3	Qualitative	In-person workshops	Physicians Nurses Physiotherapist Midwives Paramedics Social workers	No influence on IPC
Gutenstein et al (2019) [ref. 25]	New Zealand	Trauma and emergency department (rural)	8	Mixed methods	In situ and in-person simulation-based courses	Physicians Nurses	Improvement of teamwork Improvement in the application of hospital care protocols
Heath et al (2015) [ref. 26]	Canada	Mental health in PHC services (rural)	6	Mixed methods	In-person and video-conference courses Group discussions	Nurse practitioners Nurses	Clarification of professional roles Recognition of the importance of IPC Development of networks
Smith et al (2017) [ref. 27]	Canada	Emergency department (rural)	1	Qualitative	In-person wilderness medicine conference (workshops, lectures, simulations)	Physicians Nurses Others	Improvement in IPC
Interprofessional education and interprofessional practice							
Hall et al (2008) [ref. 31]	Canada	Palliative care (rural)	7	Qualitative	IPE: In-person workshop Video-conference sessions IPP: Resource and information manual Inventory of agencies and services offered	Physicians Nurses Pharmacists	None measured
LaMothe et al (2021) [ref. 32]	USA	PHC services (rural)	5	Mixed methods (longitudinal)	IPE: Educational training module IPP: Support materials, including literature reviews, tools and strategies	Physicians Nurses Nurse practitioners Psychologist Social worker	Significant improvement in the global amount of collaboration made over time
Interprofessional practice							
Bolle et al (2009) [ref. 28]	Norway	Emergency department (remote)	2	Qualitative	Video-conferencing system between rural and central emergency hospitals	Physicians Nurses Specialists	IPC between rural and central emergency hospitals superior than with phone calls Teamwork in rural sites impeded
Mitton et al (2007) [ref. 29]	Canada	Homecare services and PHC services (rural)	1	Mixed methods (longitudinal)	Collaborative partnership model to support the integration of home care and family medicine	Physicians Nurses	Improvement of teamwork Improvements in accessibility, availability and continuity of care
Tupper et al (2015) [ref. 30]	USA	Nursing facilities, emergency medical services, emergency department (rural)	10	Mixed methods (longitudinal)	Tools and protocols for standardizing critical interfacility communication and information-sharing pathways	Interdisciplinary teams from different settings	Significant improvements in key areas of communication among different settings

IPC, interprofessional collaboration. IPE, interprofessional education. IPP, interprofessional practice. PHC, primary health care.

Barriers and facilitators to the implementation of initiatives to improve interprofessional collaboration in rural and remote areas

Common themes that emerged from the articles were grouped as either barriers or facilitators to the implementation of initiatives to improve IPC.

Barriers: Four barriers related to initiatives to improve IPC specifically in rural and remote areas were identified.

Human resources Insufficient human resources emerged as a major barrier to the implementation of initiatives to improve IPC in rural and remote areas^{32,34-39}. Some authors spoke in particular of the availability of too few professionals to cover vast geographical areas, resulting in less collaboration simply because there were fewer professionals to share information with^{34,35,38}. Others spoke of work overload for rural health professionals, which hindered their engagement in initiatives to improve IPC^{34,35,37,40}. Because teams in rural PHC facilities are usually small, losing one team member can greatly impact the performance of other team members³². Other barriers related to human resources included recruitment³⁴ and retention of health professionals in rural and remote areas^{34,38} as well as the presence of transient teams²⁴, which prevented the building of solid relationships necessary for IPC^{24,38}.

Understanding of roles Family physicians frequently lacked an understanding of the basic knowledge and skills of nurse practitioners²³ and midwives⁴¹, leading to confusion and concerns

surrounding who was responsible for which aspects of patient care. In rural areas where surgical or specialist services were not locally available, insufficient understanding of the scope of practice and competencies of each professional meant physicians tended to demonstrate a lack of trust toward other professions and, therefore, were less open to sharing responsibilities^{35,41}. Siloed practice among health professionals working in some rural clinical facilities also contributed to the lack of understanding of the roles of other health professionals²⁴. Non-resident medical professionals who gave orders to those who were familiar with the local community were seen as acting inappropriately, and relationship building was hindered when individuals felt that their professional contribution was criticized and not fully acknowledged⁴².

Knowledge of context A theme specific to remote areas was the level of engagement of health professionals in becoming familiar with the particularities of this context^{36,39,42}. Virtual medical support teams who were not familiar with the realities of providing care in remote areas lacked an understanding of the roles and needs of the professionals they were trying to help^{36,42}. Physicians arriving from urban centers were not always aware that some medications and equipment are not available in remote areas³⁹. Implementing a model of care that has not been adapted to the particularities of rural clinical facilities can also inhibit the implementation of initiatives to improve IPC⁴⁰.

Traditional roles The attitudes of some professionals leaning more toward acting independently and/or according to traditional social norms were reported as a barrier to the implementation of

initiatives to improve IPC. In some rural PHC facilities, patterns of working independently rather than collaboratively were ingrained in team members, resulting in a lack of teamwork³². Physicians tended to be viewed as competent in their role simply because of their academic qualifications, whereas nurse practitioners found themselves having to repeatedly demonstrate their competence²³. In some rural settings, there were deep-rooted hierarchical relationships between health professionals that negatively impacted IPC^{32,35}. Midwives also felt the need to prove themselves and demonstrate the importance of their role due to the negative perceptions held by professionals with more traditional roles, which may be the result of a lack of recent training among health professionals working in rural facilities⁴¹.

Facilitators: Five facilitators related to initiatives to improve IPC specifically in rural and remote areas were identified.

Team size Teams in rural or remote areas were typically smaller, which promoted proximity^{23,26,35} and interactions (formal and informal) among team members^{2,27,38,43} and may have also flattened hierarchical relationships^{2,43}. Smaller team sizes also promoted shared responsibility³¹ and leadership among team members^{2,27,31,34,35,43}. In some facilities, the presence of a 'champion' within teams was reported to enhance the implementation of initiatives to improve IPC^{30,37}.

Past experiences and relationships Past experiences and relationships were important facilitators of IPC in rural or remote communities^{2,23,29,35,43,44} because professionals working in these settings frequently had a history of shared experiences with other health professionals^{27,35,41} that fostered the development of trust^{2,41}. These past experiences and relationships in the same setting also fostered the development of a network of communication with various health professionals².

Connection to community Connection to the community was another element that fostered IPC in rural or remote facilities^{35,42}. Health professionals working in these facilities for some time became familiar with the unique challenges of patients and other health professionals^{2,35,39} and developed a sense of social responsibility and accountability^{2,35,42}. They also developed a common understanding of the context^{2,35} and goals, and a shared team vision to better meet the needs of the community⁴². When initiatives to improve IPC aligned with organizational values and healthcare professionals were able to see positive impacts on the care of patients they knew, they were much more open to pursuing that initiative³².

Flexibility and openness The reality of rural or remote practices called for flexibility to adapt to different ways of doing things according to the specific environment^{2,31,34,39,41} and promote IPC-related behaviors. Working in small teams meant having the openness and flexibility to adjust to each other's personalities and capabilities^{2,31,41} and even to blur professional roles³⁴.

Financial support The presence of financial support was cited by several authors as an essential element when initiatives to improve IPC were implemented in rural PHC facilities^{30,31,35,45}. Because

teams in rural areas are smaller and workloads are high, financial support was particularly important to protect paid time to coordinate an initiative^{31,35}. This financial support was also important to compensate clinical facilities, which generally have rather small operating budgets and cannot afford to implement IPC initiatives without financial compensation³⁰. However, in the presence of a mobilized team, a lack of resources (including financial resources) could also result in creative solutions to improve IPC²⁷.

Discussion

This scoping review found that few IPE and IPP initiatives to implement IPC in rural or remote PHC settings have been reported in the literature. The most common IPE initiatives were workshops, courses, discussion groups and simulations, while IPP initiatives fell into two main categories: clinical or technological tools. More studies have focused on the barriers and facilitators to the implementation of initiatives to improve IPC in rural and remote PHC settings, allowing the authors to identify several barriers and facilitators that appear to be unique to rural and remote settings.

The scarcity of research on IPE and IPP initiatives implemented in rural or remote PHC settings may be due to a number of factors. First, it should be noted that in the scientific literature most IPE initiatives are conducted with initial training learners rather than health professionals^{46,47}. Second, it is likely that many initiatives in rural and remote PHC settings have not been published because health professionals working in these clinical settings might be less involved in research initiatives given their distance from most universities and researchers. Although the authors were able to consult some grey literature, it is possible that the number of IPE and IPP initiatives presented in this scoping review is an underestimation. Finally, the development and implementation of IPE and IPP initiatives is relatively complex¹⁵, and health organizations working in rural or remote areas may not have the full range of resources required to develop and implement these types of initiatives.

For IPP, the number of initiatives identified in the scoping review was even smaller; however, the number of IPP initiatives in different types of clinical settings identified in a systematic review by Reeves et al in 2017 was also small relative to that of IPE initiatives¹². The lack of literature on IPP could be explained by a lack of consistency in the use and understanding of the term IPP, and further conceptualization work is needed to clarify IPP¹².

With the COVID-19 pandemic in 2020, IPE initiatives in health science training programs have almost all moved online in the past year⁴⁸. This shift in approach from face-to-face to online will likely carry over to IPE initiatives in clinical settings as well. Online IPE initiatives, particularly asynchronous training, are more flexible⁴⁹, which may make this type of initiative more accessible to health professionals working in rural or remote PHC settings. However, to deploy this type of IPE initiative, reliable internet access is required⁴⁹, which is generally very limited in rural or remote settings⁵⁰. Therefore, the lack of high-speed internet access in rural and remote settings⁵⁰ may limit the deployment of online IPE

initiatives in these clinical settings and may also explain why few were identified in this scoping review.

Some of the barriers and facilitators identified may appear contradictory, indicating a high degree of variability of lived experiences and significant differences in group culture among rural and remote PHC facilities. These findings reaffirm that a one-size-fits-all model is not appropriate for IPC and that solutions should be developed locally in relation to the specificities of clinical settings. Implementers, policymakers and managers must, therefore, be flexible and carefully analyze social processes when developing and implementing initiatives to improve IPC⁵¹ in rural and remote PHC settings. Considering the importance of informal relationships in rural and remote areas, health organizations must facilitate relationship-building to foster the development of a common identity, particularly in transient teams, in order to promote collaborative practice²⁴.

The presence of a local champion has been highlighted by some authors as a facilitator of IPC deployment in rural and remote PHC facilities^{30,37,52,53}, but IPC implementation goes beyond the responsibility of a single individual and even beyond the responsibility of the team⁵¹. As highlighted, financial support from health organizations is an important element in supporting IPC implementation in rural and remote clinical settings, but strong actions and leadership from policymakers and health organizations are also needed to optimize IPC deployment⁵¹.

To be successful, IPE initiatives require leadership at all levels, both in academic and practice settings, so that the development of IPC skills and the increase in interdisciplinary practice are aligned with teaching modules¹³. The establishment of intersectoral groups or actions involving both health organizations and health professional educational institutions is a possible approach to ensure the sustainability of future IPE initiatives for health professionals working in rural or remote areas⁵². In Quebec, Canada, the delocalization of medical training in eastern Quebec led two universities and several regional health organizations to come together to identify IPC successes in PHC facilities to guide the development of IPE initiatives for health science students and health professionals working in rural and remote areas of eastern Quebec⁵⁴.

Strengths and limitations

The strengths of this scoping review lie in the rigorous process of article identification and selection. First, a search statement was

developed in close collaboration with a health sciences librarian to include all relevant articles. Subsequently, the articles were screened by three co-investigators until satisfactory inter-judge agreement was reached, thereby ensuring the credibility of the research.

Unfortunately, as recommended by some authors^{19,55}, we were not able to carry out a consultation with stakeholders involved in PHC facilities in rural and remote areas in order 'to offer additional sources of information, perspectives, meaning, and applicability'⁵⁵. Consultations with stakeholders involved in these clinical settings will be the objective of an ongoing funded research project⁵⁴. Given the limited literature on IPE and IPP initiatives to improve IPC in rural and remote PHC facilities, further research is needed. In particular, more longitudinal research might be relevant to better understand the medium-term impact of these initiatives on IPC deployment⁵⁶ in rural and remote clinical settings. In addition, the use of theory-driven evaluative approaches such as a realist evaluation would also be very useful in guiding the development of future initiatives aiming to enhance IPC in rural and remote PHC facilities. These approaches are relevant for evaluating complex interventions such as IPE and IPP because they are process-oriented⁵⁷, allow for the description of how an intervention is expected to produce its outcomes as well as the conditions under which it is expected to work⁵⁸.

Conclusion

The results of this scoping review indicate that few initiatives to improve IPC in rural and remote primary care facilities have been published in recent years, although the deployment of IPC in these facilities is critical given the different challenges faced by those in these clinical settings. The facilitators specific to rural and remote clinical settings identified in this literature review, as well as the recommendations gathered, provide hope that new initiatives more tailored to rural and remote settings will be implemented and evaluated in the coming years to improve IPC and care delivery.

Acknowledgements

We thank Lisa Starr for her linguistic revision. This work was supported by the Faculty of Health Sciences of Université de Sherbrooke, the Collectif de recherche sur la santé en région (CoRSeR) of Université du Québec à Rimouski, and the Centre de recherche du CISSS de Chaudière-Appalaches.

REFERENCES:

- 1 Romanow RJ. *Building on values: the future of health care in Canada*. Ottawa, ON: Commission on the Future of Health Care in Canada, 2002. DOI link
- 2 Gaudet A, Kelley ML, Williams AM. Understanding the distinct experience of rural interprofessional collaboration in developing palliative care programs. *Rural and Remote Health* 2014; **14(2)**: 2711. DOI link
- 3 Brown J, Lewis L, Ellis K, Stewart M, Freeman TR, Kasperski MJ. Conflict on interprofessional primary health care teams – can it be resolved? *Journal of Interprofessional Care* 2011; **25(1)**: 4-10. DOI link, PMID:20795830
- 4 Sangaleti C, Schweitzer MC, Peduzzi M, Zoboli ELCP, Soares CB. Experiences and shared meaning of teamwork and interprofessional collaboration among health care professionals in primary health care settings: a systematic review. *JBI Database of*

- Systematic Reviews and Implementation Reports* 2017; **15(11)**: 2723-2788. DOI link, PMID:29135752
- 5** Brandt B, Lutfiyya MN, King JA, Chioreso C. A scoping review of interprofessional collaborative practice and education using the lens of the Triple Aim. *Journal of Interprofessional Care* 2014; **28(5)**: 393-399. DOI link, PMID:24702046
- 6** Pullon S, Morgan S, Macdonald L, McKinlay E, Gray B. Observation of interprofessional collaboration in primary care practice: a multiple case study. *Journal of Interprofessional Care* 2016; **30(6)**: 787-794. DOI link, PMID:27797634
- 7** Canadian Interprofessional Health Collaborative. *A national interprofessional competency framework*. Vancouver, BC: Canadian Interprofessional Health Collaborative, 2010.
- 8** Saint-Pierre C, Herskovic V, Sepúlveda M. Multidisciplinary collaboration in primary care: a systematic review. *Family Practice* 2018; **35(2)**: 132-141. DOI link, PMID:28973173
- 9** Epping-Jordan JE, Pruitt SD, Bengoa R, Wagner EH. Improving the quality of health care for chronic conditions. *BMJ Quality & Safety* 2004; **13(4)**: 299-305. DOI link
- 10** Dahrouge S, Muldoon L, Ward N, Hogg W, Russell G, Taylor-Sussex R. Roles of nurse practitioners and family physicians in community health centres. *Canadian Family Physician* 2014; **60(11)**: 1020-1027.
- 11** Lemieux-Charles L, McGuire WL. What do we know about health care team effectiveness? A review of the literature. *Medical Care Research and Review* 2006; **63(3)**: 263-300. DOI link, PMID:16651394
- 12** Reeves S, Pelone F, Harrison R, Goldman J, Zwarenstein M. Interprofessional collaboration to improve professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews* 2017; **6(6)**: CD000072. DOI link, PMID:28639262
- 13** Herath C, Zhou Y, Gan Y, Nakandawire N, Gong Y, Lu Z. A comparative study of interprofessional education in global health care: a systematic review. *Medicine (Baltimore)* 2017; **96(38)**: e7336. DOI link, PMID:28930816
- 14** Pauzé E, Reeves S. Examining the effects of interprofessional education on mental health providers: findings from an updated systematic review. *Journal of Mental Health* 2010; **19(3)**: 258-271. DOI link, PMID:20441490
- 15** Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes (update). *Cochrane Database of Systematic Reviews* 2013; **2013(3)**: CD002213. DOI link, PMID:23543515
- 16** Donato E. *The importance of interprofessional collaboration in health care in rural and northern settings*. Thunder Bay: Northern Policy Institute, 2015.
- 17** World Health Organization. *Framework for action on interprofessional education & collaborative practice*. Geneva: WHO, 2010.
- 18** Reeves S, Goldman J, Gilbert J, Tepper J, Silver I, Suter E, et al. A scoping review to improve conceptual clarity of interprofessional interventions. *Journal of Interprofessional Care* 2011; **25(3)**: 167-174. DOI link, PMID:21182439
- 19** Colquhoun HL, Levac D, O'Brien KK, Straus S, Tricco AC, Perrier L, et al. Scoping reviews: time for clarity in definition, methods, and reporting. *Journal of Clinical Epidemiology* 2014; **67(12)**: 1291-1294. DOI link, PMID:25034198
- 20** Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology* 2005; **8(1)**: 19-32. DOI link
- 21** Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. *Qualitative Health Research* 2005; **15(9)**: 1277-1288. DOI link, PMID:16204405
- 22** Bandara W, Furtmueller E, Gorbacheva E, Miskon S, Beekhuizen J. Achieving rigor in literature reviews: insights from qualitative data analysis and tool-support. *Communications of the Association for Information Systems* 2015; **37(1)**: 8. DOI link
- 23** Bailey P, Jones L, Way D. Family physician/nurse practitioner: stories of collaboration. *Journal of Advanced Nursing* 2006; **53(4)**: 381-391. DOI link, PMID:16448481
- 24** Gum LF, Sweet L, Greenhill J, Prideaux D. Exploring interprofessional education and collaborative practice in Australian rural health services. *Journal of Interprofessional Care* 2020; **34(2)**: 173-183. DOI link, PMID:31429617
- 25** Gutenstein M, Kiuru S, Withington S. Development of a rural inter-professional simulation course: an initiative to improve trauma and emergency team management in New Zealand rural hospitals. *Journal of Primary Health Care* 2019; **11(1)**: 16-23. DOI link, PMID:31039985
- 26** Heath O, Church E, Curran V, Hollett A, Cornish P, Callanan T, et al. Interprofessional mental health training in rural primary care: findings from a mixed methods study. *Journal of Interprofessional Care* 2015; **29(3)**: 195-201. DOI link, PMID:25291262
- 27** Smith HA, Reade M, Marr M, Jeeves N. Developing a grounded theory for interprofessional collaboration acquisition using facilitator and actor perspectives in simulated wilderness medical emergencies. *Rural and Remote Health* 2017; **17**: 3880. DOI link, PMID:28355879
- 28** Bolle SR, Larsen F, Hagen O, Gilbert M. Video conferencing versus telephone calls for team work across hospitals: a qualitative study on simulated emergencies. *BMC Emergency Medicine* 2009; **9**: 22-22. DOI link, PMID:19943978
- 29** Mitton C, O'Neil D, Simpson L, Hoppins Y, Harcus S. Nurse-physician collaborative partnership: a rural model for the chronically ill. *Canadian Journal of Rural Medicine* 2007; **12(4)**: 208-216.
- 30** Tupper JB, Gray CE, Pearson KB, Coburn AF. Safety of rural nursing home-to-emergency department transfers: improving communication and patient information sharing across settings. *Journal for Healthcare Quality* 2015; **37(1)**: 55-65. DOI link, PMID:26042377
- 31** Hall P, Weaver L, Handfield-Jones R, Bouvette M. Developing leadership in rural interprofessional palliative care teams. *Journal of*

- Interprofessional Care* 2008; **22**: 73-79. DOI link, PMid:19005956
- 32** LaMothe J, Hendricks S, Halstead J, Taylor J, Lee E, Pike C, et al. Developing interprofessional collaborative practice competencies in rural primary health care teams. *Nursing Outlook* 2021; **69(3)**: 447-457. DOI link, PMid:33386146
- 33** King HB, Battles J, Baker DP, Alonso A, Salas E, Webster J, et al. TeamSTEPSTM: team strategies and tools to enhance performance and patient safety. In: In K Henriksen, JB Battles, MA Keyes, et al (Eds). *Advances in patient safety: new directions and alternative approaches*. Rockville, MD: Agency for Healthcare Research and Quality (US), 2008; Vol. 3.
- 34** McNeil K, Mitchell R, Parker V. The paradoxical effects of workforce shortages on rural interprofessional practice. *Scandinavian Journal of Caring Sciences* 2015; **29(1)**: 73-82. DOI link, PMid:24650162
- 35** Parker V, McNeil K, Higgins I, Mitchell R, Paliadelis P, Giles M, Parmenter G. How health professionals conceive and construct interprofessional practice in rural settings: a qualitative study. *BMC Health Services Research* 2013; **13(1)**: 1-21. DOI link, PMid:24289815
- 36** Renouf T, Alani S, Whalen D, Harty C, Pollard M, Morrison M, et al. City mouse, country mouse: a mixed-methods evaluation of perceived communication barriers between rural family physicians and urban consultants in Newfoundland and Labrador, Canada. *BMJ Open* 2016; **6(5)**: e010153-e010153. DOI link, PMid:27154475
- 37** Spencer J, Woodroffe J, Cross M, Allen P. 'A golden opportunity': exploring interprofessional learning and practice in rural clinical settings. *Journal of Interprofessional Care* 2015; **29(4)**: 389-391. DOI link, PMid:25300807
- 38** Stuart J, Hoang H, Crocombe L, Barnett T. Relationships between dental personnel and non-dental primary health care providers in rural and remote Queensland, Australia: dental perspectives. *BMC Oral Health* 2017; **17**: 1-10. DOI link, PMid:28629349
- 39** Young SK, Young TK. Assessing clinical support and inter-professional interactions among front-line primary care providers in remote communities in northern Canada: a pilot study. *International Journal of Circumpolar Health* 2016; **75**: 32159-32159. DOI link, PMid:27633080
- 40** Farmer J, Stimpson P, Tucker J. Relative professional roles in antenatal care: results of a survey in Scottish rural general practice. *Journal of Interprofessional Care* 2003; **17(4)**: 351-362. DOI link, PMid:14763339
- 41** Munro S, Kornelsen J, Grzybowski S. Models of maternity care in rural environments: barriers and attributes of interprofessional collaboration with midwives. *Midwifery* 2013; **29(6)**: 646-652. DOI link, PMid:22863239
- 42** Mills JE, Francis K, Birks M, Coyle M, Henderson S, Jones J. Registered nurses as members of interprofessional primary health care teams in remote or isolated areas of Queensland: collaboration, communication and partnerships in practice. *Journal of Interprofessional Care* 2010; **24(5)**: 587-596. DOI link, PMid:20594068
- 43** Morris D, Matthews J. Communication, respect, and leadership: interprofessional collaboration in hospitals of rural Ontario. *Canadian Journal of Dietetic Practice and Research* 2014; **75(4)**: 173-179. DOI link, PMid:26067069
- 44** Löffler C, Koudmani C, Böhmer F, Paschka SD, Höck J, Drewelow E, et al. Perceptions of interprofessional collaboration of general practitioners and community pharmacists – a qualitative study. *BMC Health Services Research* 2017; **17(1)**: 224-224. DOI link, PMid:28327136
- 45** Samuels ME, Xirasagar S, Elder KT, Probst JC. Enhancing the care continuum in rural areas: survey of community health center-rural hospital collaborations. *Journal of Rural Health* 2008; **24(1)**: 24-31. DOI link, PMid:18257867
- 46** Reeves S, Palaganas J, Zierler B. An updated synthesis of review evidence of interprofessional education. *Journal of Allied Health* 2017; **46(1)**: 56-61.
- 47** Spaulding EM, Marvel FA, Jacob E, Rahman A, Hansen BR, Hanyok LA, et al. Interprofessional education and collaboration among healthcare students and professionals: a systematic review and call for action. *Journal of Interprofessional Care* 2021; **35(4)**: 612-621. DOI link, PMid:31865823
- 48** Langlois S, Xyrichis A, Daulton BJ, Gilbert J, Lackie K, Lising D, et al. The COVID-19 crisis silver lining: interprofessional education to guide future innovation. *Journal of Interprofessional Care* 2020; **34(5)**: 587-592. DOI link, PMid:32811213
- 49** Evans S, Ward C, Shaw N, Walker A, Knight T, Sutherland-Smith W. Interprofessional education and practice guide no. 10: developing, supporting and sustaining a team of facilitators in online interprofessional education. *Journal of Interprofessional Care* 2020; **34(1)**: 4-10. DOI link, PMid:31366252
- 50** Richard J, Bergeron DA, Lessard L, Toupin I, Ouellet N, Bédard E. Challenges of intersectoral action and avenues for reflection to strengthen consultation in rural areas of Quebec in the context of a pandemic. [In French]. *Global Health Promotion* 2021; **28(1)**: 98-102. DOI link
- 51** Mulvale G, Embrett M, Razavi SD. 'Gearing Up' to improve interprofessional collaboration in primary care: a systematic review and conceptual framework. *BMC Family Practice* 2016; **17(1)**: 1-13. DOI link, PMid:27440181
- 52** Martin P, Moran M, Graham N, Hill A. The integral role of organisational governance in promoting interprofessional education in rural settings. *International Journal of Environmental Research and Public Health* 2021; **18(6)**: 3041. DOI link, PMid:33809540
- 53** McNair R, Brown R, Stone N, Sims J. Rural interprofessional education: promoting teamwork in primary health care education and practice. *Australian Journal of Rural Health* 2001; **9(Suppl1)**: S19-S26. DOI link
- 54** Bergeron DA, Lessard L, Perron D, Maziade J. Successful interprofessional collaboration in remote family medicine groups: a research protocol. [In French]. *Revue francophone internationale*

de recherche infirmière 2022 (in press).

55 Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implementation Science* 2010; **5(1)**: 1-9. DOI link, PMID:20854677

56 Reeves S. Ideas for the development of the interprofessional education and practice field: an update. *Journal of Interprofessional Care* 2016; **30(4)**: 405-407. DOI link, PMID:27332499

57 Bergeron DA, Tremblay M-C, Dogba MJ, Martin D, McGavock J.

The use of realist approaches for health research in Indigenous communities. *AlterNative: An International Journal of Indigenous Peoples* 2021; **17(1)**: 106-110. DOI link

58 Vachon B, Désorcy B, Camirand M, Rodrigue J, Quesnel L, Guimond C, et al. Engaging primary care practitioners in quality improvement: making explicit the program theory of an interprofessional education intervention. *BMC Health Services Research* 2013; **13**: 106-106. DOI link, PMID:23514278

This PDF has been produced for your convenience. Always refer to the live site <https://www.rrh.org.au/journal/article/7566> for the Version of Record.