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UNIVERSITY OF CALGARY
O'Brien Institute for Public Health
Health Technology Assessment Unit

Recruitment and Retention of Rural and Remote Physicians – the Role of Alternate Payment Models

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The Health Technology Assessment Unit

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ABRIDGED REPORT

1 Executive Summary

Health disparities between urban and rural-dwelling Canadians are well documented, and highlight the importance of recruiting and retaining physicians to rural areas. In this study, our objectives were to identify factors important in the recruitment/retention of rural physicians, and to understand the role payment models may play in supporting these efforts.

Existing literature has identified factors that influence recruitment and retention across four main themes: personal (e.g., rural background), community (e.g., social and recreational activities), education (e.g., rural placement during training), and policy (e.g., payment models, incentives). Within the literature, there were three overarching conclusions: 1) studies consistently note that payment models are not the most important contributing factor, but rather are considered amongst other non-monetary factors; 2) a combination of monetary and non-monetary incentives are most strongly associated with rural recruitment/retention; and, 3) there is consistency in the most important trade-offs physicians are willing to make in order to work in rural settings (e.g., income, locum relief, and desirable on-call arrangements). Noticeably missing from this literature is attention to Indigenous rural and remote communities, and how preference for payment models might differ by physician demographics (e.g., physician sex, country of medical training, age).

To further understand the role of payment models in retention and recruitment in Alberta, we conducted interviews with 13 Alberta rural physicians. Findings highlighted the importance of professional factors (e.g., variation and scope of practice, attractiveness of rural living). Physicians emphasized the challenges associated with rural practice, which may impact retention (e.g., poor locum support and heavy on-call burden; challenges of a complex patient panel). Our findings indicate that payment models play a limited role on their own in addressing these challenges, but that they might attract additional physicians to rural areas. This could reduce workload and on-call burden, and facilitate a collaborative “team-based” care model, optimizing where and how physicians spend their time. Physicians stressed that distrust in government might impede their considerations for alternate payment models, but that this could be mitigated involving physicians in the development of contracts.

Based on the findings of our work, we present five key considerations (Box 1).

Box 1. Considerations based on research findings

Key Considerations
1. Focus attention on non-financial barriers through professional support to reduce on-call hours, and improve locum coverage and community integration; 2. Include rural physicians in the development and implementation of alternate payment models to ensure they are perceived to be flexible, fair, and tailored to the specific needs of the community; 3. Avoid perverse incentives of all payment models by ensuring accountability mechanisms are in place for all physician payment models; 4. Advertising alternate payment options by highlighting transparency and trust, flexibility based on community needs, income security, and team-based care; 5. Target physicians most likely to remain in rural settings (e.g., those with rural backgrounds), rather than incentivizing recruitment for physicians unlikely to remain long-term (e.g., internationally trained physicians).

2 Overview

The HTA Unit worked with members of the UofC Health Economics group to develop an abridged report which summarizes key findings from our report on the role of alternate payment models in the recruitment and retention of rural physicians (Appendix A: Full Report). This work was funded by the SPOR Evidence Alliance, with co-funding from a CIHR foundation grant. The overarching objectives of this abridged report were to: 1) synthesize evidence from recent studies on factors related to recruitment/retention of rural physicians; and their preferences for payment models and incentives (monetary and non-monetary); and 2) report the perspectives of Alberta rural physicians on factors that influence recruitment and retention through key informant interviews. This abridged report also provides pragmatic considerations that could be utilized as Alberta endeavours to improve the recruitment and retention of physicians in rural or remote settings, including exploring the role of alternate payment models. We acknowledge the critical role of primary care for rural Indigenous populations, whose needs are not fully met by primary care currently. We also acknowledge that Indigenous researchers, organizations and communities are best positioned to advance the needs of Indigenous communities. Thus, recruitment and retention for primary care for rural indigenous communities is beyond the scope of this current abridged report.

3 Facilitators and Barriers to Rural Physician Recruitment and Retention: what the literature tells us

Based on current theoretical thinking and published literature around physician recruitment and retention, factors across four main themes emerged: personal, community, education, and policy (Figure 1). Understanding the interrelation between these main factors should inform recruitment and retention strategies to mitigate barriers and increase the number of family physicians choosing rural practice.

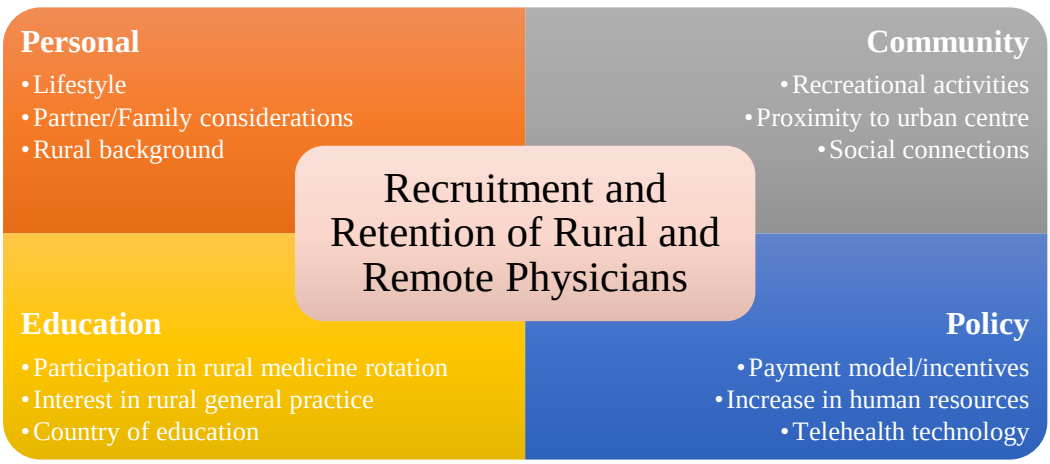

Figure 1. Themes of factors for recruitment and retention for rural and remote physicians.

Within each of the four main themes, there are facilitators and barriers for both recruitment and retention. Successful *recruitment* strategies will ideally target individuals who are most likely to remain in rural setting once they have established their practice. One of the most consistently reported factor in successful recruitment is targeting physicians who have a rural background (e.g., graduated from rural high school, rural placement in medical school).[1-4] Barriers to recruitment for rural practice lay primarily in the urban experience of the physician, and the perception of rural living and practice (e.g., perception of inadequate facilities, social isolation, and inability of spouse to find work). [2,5] Successful *retention* strategies encourage and support physicians to integrate and adapt to their rural community, and establish their practice. Feeling appreciated by their community, valuing personal relationships with patients, and spousal job satisfaction are often cited as facilitators of retention. [2,3,6] Retention barriers differ from recruitment barriers as they are based on the lived experience of the physician, including their integration into the community, and experience in establishing their practice (e.g., spouse unable to find fulfilling work, no connection to community, poor on-call arrangements and/or locum relief)[4,6,7] (Table 1).

Table 1. Facilitators and Barriers cited for Recruitment and Retention of Rural Physicians

<table>
<tr><th></th><th colspan="2">Recruitment</th><th>Retention</th></tr>
<tr><td rowspan="2">Facilitators</td><td colspan="2">• Interest in generalist practice
• Positive rural experience in medical school</td><td>• Feel appreciated by community
• Value having a mixed professional-personal relationship with patients
• Strong connection and sense of duty to community
• Spouse job satisfaction
• Ability to practice full skill set
• Social support systems
• Adequate paid annual leave</td></tr>
<tr><td colspan="3">• Rural background of physician and/or spouse
• Desirable recreational/social activities
• Monetary and non-monetary incentives</td></tr>
<tr><td rowspan="2">Barriers</td><td colspan="2">• Perception that rural physicians are less qualified than urban physicians
• Perception of inadequate facilities
• Perception that spouse will be unable to find suitable work
• Inadequate or negative experience in rural medicine elective</td><td>• No connection to community
• Inability for spouse to find career
• Inadequate remuneration
• Poor locum support
• Poor on-call arrangements
• Perceived lack of appreciation for services provided</td></tr>
<tr><td colspan="3">• Desire for urban living
• Isolation from friends and family</td></tr>
</table>

Of note, the importance or impact of these factors may differ amongst physician demographics such as sex, age, and country of medical education. For example, physicians who acquired training from an international medical school may use a rural position as a stepping stone into the Canadian system; however, their desire for urban living may result in leaving rural practice for an urban setting once they have established their career in Canada.[8]

3.1 Alberta Context

A number of studies have been conducted in Alberta that add to the broader understanding of rural recruitment and retention. Evidence in Alberta is largely consistent with national and international evidence noted above. A 2012 study examined retention factors cited by physicians, spouses, health care staff, and community members to inform the development of a retention framework. Using data gathered through interviews with participants from four diverse rural Alberta communities, the authors suggest three domains that are all interrelated: personal retention (e.g., individual choice, spousal and family support, goodness-of-fit), professional retention (e.g., physician dynamics, physician supply, practice set-up, scope of practice), and community retention (e.g., active support, recreational assets, connection).[9,10] Additionally, a 2012 evaluation of the Enrichment Program, an initiative of the Rural Physicians Action Plan to improve and upgrade physician skills and training, indicated that five-year retention was 1.3 times greater amongst physicians enrolled in the Enrichment Program vs. un-enrolled physicians matched according to age, size of community, physician-type, and years of practice.[11]

3.2 Preferences for Payment Models

A diverse methodology is applied in the literature, although nearly half (n=5) of the 12 studies were discrete choice experiments (DCE), which enable measurement and quantification of preferences.[12-14] A notable finding from this literature review is that payment models are not often considered in isolation (e.g., without considering other incentives) in the rural recruitment/retention literature over the past 10 years. With the exception of Russell et al.,[15] most studies do not report payment models to be of high importance in choosing to select and stay in a rural community to practice medicine, regardless of the model (e.g., private practice vs. salary). Rather, payment models are considered in combination with other incentives, and other factors (e.g., personal, community, and education) seem to be stronger predictors of rural recruitment and retention. Within the DCE studies, physician preferences were strongest for the following factors:

income, hours worked per week, spousal/partner employment, on-call rotation, housing availability, practice type, clinic technology, continuing medical education/training, community incentives, locum relief, and location.

4 Interviews with Rural and Remote Physicians in Alberta

4.1 Overview and Objectives

We conducted semi-structured qualitative interviews with 13 primary care physicians in rural or remote communities in Alberta, Canada. The objectives were to provide a clearer understanding of the factors that attract and retain rural physicians, including the role that alternative payment models could play, and to determine the preferences of rural physicians for alternate payment models, and what specific features are important to them.

4.2 Methods

Two researchers led the collection and analysis of data. Thirteen interviews were held with primary care physicians practicing under FFS (seven), alternative payment model (APM) (five), or blended (one) models. An interview guide was used to elicit responses from participants. Interview data was analyzed using the thematic framework approach, and data saturation for the main themes was achieved after eight interviews. The findings are presented under seven themes that emerged from the data analysis, which are described below and in Table 2, including selected quotes. Detailed methods and results are reported in the appendix.

4.3 Findings (also see Table 2 below)

4.3.1 What attracts physicians to rural or remote practice?

Overall, study participants viewed the decision to pursue rural medicine as a "package deal". This package included: (i) *community factors*, such as quality of life, attraction to the rural lifestyle, and the sense of valued contribution to the community; (ii) *monetary and non-monetary incentives*, such as relocation support; (iii) *personal factors*, such as previous rural experience, and family-related factors, and (iv) *professional factors*, including autonomy in practice, broad scope of practice, and strong patient-physician relationships. Of these factors, physicians emphasized the broad scope of practice alongside the attractiveness of rural living as key elements motivating them to work in rural and remote locations. Thus, both professional fulfillment and lifestyle considerations weigh into the decision to work rurally.

4.3.2 Barriers and challenges associated with rural/remote practice:

Physicians identified a number of challenges associated with rural practice, categorized under five key domains including *practice and professional challenges*, *family-related and personal factors*, *challenges related to patient care*, and *community challenges*. The most commonly cited challenges were professional including workload and on-call burden, inadequate access to specialists, and equipment that was not up to date. There was a recognition that rural medicine is more challenging as it necessitates a breadth and depth of skills not required in urban practice. This was both a draw and a challenge for physicians.

4.3.3 Factors that facilitate retention including the role of payment models:

Physicians in our study expressed a number of factors that could improve retention, but no one single factor was sufficient on its own. *Financial incentives* were viewed as helpful in recruitment, but insufficient to retain doctors over the longer term. Physicians also felt that an erosion of trust in government negatively influenced their willingness to continue in rural practice in Alberta. Specifically, they felt undervalued by government in general, and perceived that recent changes by government reflected a lack of respect for rural physicians/rural practice. Physicians expressed that government could undertake a number of actions to help them feel supported, which would, in turn, help them to tolerate the challenges associated with rural practice. Suggestions included support around *professional and practice factors*, including improved coordination of specialist support systems, support for locums, education support for rural residents, and innovative healthcare delivery options, such as virtual care. They also emphasized that sometimes it is *personal and community factors* (such as personal needs, or spousal concerns), that shape their decision of whether or not to stay in rural practice.

4.3.4 Factors that physicians consider in decisions around payment model changes:

Overall, the majority of the physicians were open to considering other payment models. Of note, while APM physicians were more reluctant to consider FFS, some FFS physicians were more open to alternative payment models contingent on the government/AH addressing specified concerns. For physicians who were willing to consider alternate payment models, they emphasized the importance of *developing "fair contracts" that were clear, simple, and adequately compensated*. Physicians also emphasized that *APMs ought to be developed in collaboration with physicians according to the specific to the needs of the community to account for peculiarities such as population fluctuations or a more complex patient panel in some locales*. They also expressed concerns about implementing and administering alternate

payment models but noted that these concerns might be mitigated if physicians were involved in contract design.

4.3.5 The potential role of payment model in retention:

Physicians generally felt that payment models have some role to play in attracting and retaining rural physicians. This view was expressed primarily from physicians operating under APMs. In these cases, physicians perceived that certain attributes of APMs might appeal to doctors considering making the move to rural practice, including facilitating a collaborative, "team-based" care model. For instance, they described how collaboration with allied health professionals in clinical practice could spread out the workload and triage patient care such that more minor issues could be dealt with by nurse practitioners, or through phone follow-ups with physicians, while more serious issues could be reserved for in-person physician appointments. On the other hand, a few FFS physicians expressed that they would not be interested in APMs, as they were concerned that APM contracts might be vague or might be cancelled without due consultations. In these cases, a change in payment model from FFS to APM was likely to negatively influence their decision to keep practicing in rural/remote towns in Alberta.

4.3.6 Physician perspectives on the potential impact of alternate Payment models (APMs):

When asked about their perspectives on APMs, physicians practicing under APMs generally felt that this model afforded them the flexibility to structure their practice according to the needs of the community and/or their patient panel. Physicians felt this style of practice might be attractive to physicians looking to move into rural practice, and indeed, some participants noted that the payment model did in fact shape their choice about where to practice. In addition, physicians practicing under both FFS and APMs noted that APMs were appealing because they could provide income security and paid vacation time. Some FFS physicians felt like working under an APM would be less stressful than working in FFS, since there is less pressure to pay overhead costs during time off. Despite these appealing aspects, physicians highlighted some potential drawbacks of APMs, which included concerns about loss of autonomy and worries that this model could create "free riders" leading to an imbalance in workloads.

4.3.7 Physician perspective on the potential impact of FFS

FFS physicians articulated that FFS provided them the opportunity to work as much or as little as they like, and to customize their own schedule. This was sometimes driven by concerns around earning enough to cover overhead costs or paying off student debt. Since

FFS incentivized doctors to book more appointments, some physicians felt that this payment model supported patient access to healthcare but might lead to shorter visits. Participants also emphasized the potential drawback of FFS, in that a small number of doctors might be inclined to see too many patients or schedule more follow-ups than are necessary in order to maximize their earnings.

4.4 Discussion

Overall, study participants viewed the decision to pursue rural medicine as a package deal and considered many interrelated factors as being important to recruitment and retention, not just payment models. We identified physicians' perspectives on benefits and drawbacks to both APMs and FFS payment models for rural practice and noted that these play a limited role on their own in recruiting and retaining physicians. In addition to ensuring that a payment model accommodates the peculiarities of rural practice and specific community needs, the comments about both payment models strongly suggests the need to have accountability mechanisms to minimize perverse incentives associated with both payment models.

Of note, this study had some limitations including a small sample size due to low response rate, which might limit the generalizability of the study. However, saturation was achieved during data collection and no additional major themes were emerging from additional interviews. Also, the findings of this study are consistent with existing literature (discussed above) on factors that facilitate recruitment and retention to rural practice, including scope and variability of practice, personal or family related factors, financial incentives, and strong physician-patient relationships.

Many physicians noted a recent erosion of trust in government and emphasized the need for physician involvement in contract design, which would not only support them in feeling valued for their work in rural regions, but also allow for the design of contracts to maximize both physician satisfaction as well as patient care.

Table 2. Summary of themes and categories

Themes	Subthemes	Categories*	Quotes
What attracts physicians to rural areas	Community factors	**Attracted to rural lifestyle**; Quality of Life; Valued contribution or work in community	*"it's about different activities. We go biking. We interact a lot with the community. My children are still little, so my neighbour is usually the one who's watching them when I have extra shifts if my husband is busy with work. So, all these factors made us love staying [here]. "* **APM physician**
	Financial incentives	Monetary and Non-monetary incentives	*"I wouldn't have been able to come here without the rural program. Yeah, they sponsored my anesthesia assessment and I got a stipend throughout that"* **FFS physician**
	Personal/family related factors	Access to childcare; retirement plan; Previous personal rural experience; Spousal factors	*"I come from a really small town. I really loved where I grew up. I recognize that there were some serious gaps in clinical care as I was growing up, and certainly wanted to mitigate some of that when I got out of med school"* **APM physician**
	Professional factors (motivators)	Autonomy or Independence; Patient physician relationships; **Variety in scope of practice**	"*In a rural centre you just having a broader scope of practice being able to work in different environments and different types of medicine."* **FFS physician**
Barriers and challenges associated with rural remote practice	Challenges related to patient care	**Complex patient panel**; Limited access to specialist; Outdated or old equipment or facilities	*The other big thing is access for our patients to diagnostic tests. So, I can't get an echocardiogram here or a stress test here. I'm limited, I can get some kinds of ultrasound... So those are probably the major things."* **APM physician**
	Community challenges	Cold or severe climate; Cultural or Ideological differences; community pressures	*"the intensity of the work, the hours, the inability to switch off, you always have kind of a duty of care when needed within your community, right now for me, the biggest challenges."* **FFS physician**
	Family related and personal factors	**Season of life needs**; Spousal factors; **Work life balance**	*"Most physicians that I see that move and that's once again immigrants like myself, move because they believe there's better schooling to bigger cities or private school."* **FFS physician**
	Practice and Professional challenges	Keeping up with variable clinical knowledge; **High on call burden**; Travel/professional related barriers	*"It's absolutely relentless is what I would say. So, like you are never off duty. You don't just do your days' work and walk away. So, I think it's very difficult in a rural or remote practice to really be switched off."* **FFS physician**
Factors that facilitate/ impede retention	Financial incentives	Rural retention bonuses	*"I think the rural retention bonuses….definitely make the job more attractive, but it's not enough to be a driver to work rurally unless, you know, some young doctors are doing locums or whatever just trying to make some money, but generally it's not enough to be a driver but it is a nice added incentive*." **FFS physician**
	Personal/family factors	Family support; Investment in community; Spouse's employment situation	*"I've worked in [places where] the community members, they come up to me and they say, can we help, you know, getting your husband a job? I think that, you know, if we did have governmental supports in that sense, that would be fantastic."* **APM physician**
	Professional and system factors	**Health System Support**; Innovative care or delivery models; Strong specialist referral systems	"*When we go on holidays, we cannot get a locum to cover us. So, our bills just build up while we are on holidays. so yeah, like a good locum program, because Alberta has a locum program and it's totally insufficient. A better locum program would make a huge difference*." **FFS physician**
	Distrust in government	**Physicians feel undervalued**	"*I intend to remain in mostly rural practice, but I'm not sure if I will remain in this practice because of how we have been treated recently by our Minister of Health."* **FFS physician.**

Factors that physicians consider in decisions around payment model changes	Contract concerns	**Fair contracts;** Potential to earn less; Fear of loss of autonomy and flexibility; Feasibility of one payment model for all types of clinical work; **Involvement of physicians in payment model design**	*"I know one of the current issues and concerns that a lot of physicians have is of the, the contract is actually quite vague and people are concerned that going into a varied contract you actually lose a lot of autonomy and in a fee-for-service model it's very clear and you are kind of in control, whereas in an APM you are kind of giving over that control and you have this obligation to provide all of this care, but it's the goal posts can be moved at any point. So, I think that's one of the current concerns regarding it"* **FFS physician**
	Implementation concerns	**Difficulty in administration;** Financial Losses associated with changing payment models	*"I actually looked into it last year, so when the AMA were talking about that I contacted their team to see, get more information on it and see if it would be applicable to our practice, and at the time my colleagues were not interested in that model, so I didn't go any further,".* **FFS physician**
	Peculiarities of rural practice	**Population fluctuations**; Travel costs	*"I think number one factor is the number of hours that you have to work, and the load, because as I mentioned earlier if I'm practicing in a busier place than <town> then I would definitely would prefer a fee-for-service instead of working 24-hours and seeing only a small load of patients"* **APM physician**
The role of payment models in retention		Ability to share workload with allied healthcare workers on an APM; **APM could attract new physicians**	*"I think if [an APM contract] was attractive it would make it easier to recruit to this area. So I think like having an extra person to share the workload would reduce my workload, so that in itself would certainly be helpful."* **APM physician**
Physician perspectives on the potential impact of APM	Impact Physician practice	Free rider problem; Potential loss of autonomy; Reduces paperwork; **Loss of drive to innovate, improve or see patients**; **Income security; Paid vacation time;** Potential cost savings	*"when I'm working in Emerg and someone else prints off on the computer that they've registered, I'm like, ah dam it, I just want to go to sleep. And, if I was actually paid person and I was knowing that I was getting, you know, the middle of the night rate for seeing someone in Emerg, I'd probably be happy because that's me making a ton of money, right, but because I'm salary, I just want to go to bed, leave me alone, stop coming to Emerg."* **APM physician**
	Impact on Patient care	Enables holistic patient care; **More time with patients**	*"I feel like I'm less rushed. I'm not turning so much, I'm not on the treadmill. If we are seeing them (patients), we are just focused on measures more. You know, how often has their blood pressure been done? What's their cholesterol? What's their risk factors? Is there something we are missing?".* **APM physician**
Physician perspective on the potential impact of FFS	Impact on Physician practice	**Customized schedule/workload**; **Under pressure for income to keep practice running;** Income less stable; Increased paperwork; Might create incentives in a small proportion of physicians to see too many patients	*"The one thing that's nice about being on the fee-for-service is I can sort of hustle if I want to. I can take more shifts. I can see more patients. I'm kind of the guy right now if you have a patient in the hospital you are not getting along with or someone that's been dumped by every other doctor in town, I'm the one that takes them on. I'm willing to take on that work".* – **FFS physician**
	Impact on Patient care	**Improved patient access;** Tendency to have more follow ups; **Tendency to spend shorter time periods with patients**	*"it constrains in the sense that you do feel like under pressure to see a certain number of patients per day to make sure that your income is secure and you know, sometimes you would like to spend longer with less patients in what fee-for-service would allow."* **FFS physician**

*** bolded categories represent categories most commonly mentioned / most important**

5 Key Findings and Pragmatic Considerations

5.1 Key Findings

The overarching aim of this abridged report was to provide a clearer understanding of factors that influence rural and remote physician recruitment and retention; in particular, how physician preference for payment model (e.g., alternate versus fee-for-service) might influence their decision to choose and stay in a rural community. We identified multiple factors that affect physician's decision to *choose* rural practice, including interest in generalist practice and positive rural experience in medical school. We also identified multiple factors that affect physician's decision to *stay* in rural practice, including strong connection to community, spouse job satisfaction, and social support systems. Some factors influence both recruitment and retention, including rural background of physician and/or spouse; professional factors including autonomy in practice, and broad scope of practice; desirable recreational/social activities, and monetary and non-monetary incentives. Noticeably missing from the literature was evidence on physician recruitment and retention in rural and remote Indigenous communities.

There are many challenges associated with rural and remote practice, including practice and professional challenges, family-related and personal factors, challenges related to patient care, community challenges, and morale. Though payment models were rarely cited to outweigh all these other factors, they can be part of the package deal that includes strategies to mitigate challenges as a way of valuing and respecting physicians. Alternate payment models can facilitate a collaborative, "team-based" care model, where allied health professionals deal with issues within their scope of practice, virtual visits could be done where appropriate and physician visits reserved for issues which cannot be dealt with entirely by allied health.

5.2 Final remarks

Given these findings, we make the following observations to inform policy-makers:

1. Attention must be paid to nonfinancial barriers that can be modified through health policy, including: professional support to ensure on-call hours are manageable; locum coverage; appropriate access to specialist support; robust virtual health; and support systems in place to enable community integration.

2. Including rural physicians in the development and implementation of alternate payment models may ensure they are perceived to be flexible, fair, and responsive to the needs of rural/remote physicians and the specific needs of the community.
3. As physicians noted, unintended “perverse” incentives occur within all payment models; as such, accountability mechanisms are needed to ensure funding models meet the needs of patients and the health system
4. To increase the uptake of alternate payment options, government should highlight: ability to tailor to local circumstances (based on patient numbers and needs); transparency and trust; flexibility; income security; paid vacation time; autonomy; potential for team-based care.
5. Recruitment strategies should target physicians most likely to remain in rural settings, rather than incentivizing recruitment for physicians unlikely to remain in the long-term. Building a pipeline of physicians most likely to remain in rural settings would include targeting medical students with rural background, and positive exposure to rural experiences during training; and offering support for these physicians to establish practice in rural areas.

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APPENDIX A – FULL REPORT

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Recruitment and Retention of Rural and Remote Physicians – the Role of Alternate Payment Models [Full Report]

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University of Calgary

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1 Executive Summary

The notable health disparities between urban and rural-dwelling Canadians is well documented. The lack of access to primary care may contribute to this disparity. Given the lower health status of rural Albertans, having strong primary care in rural areas is critical. There is current interest in attracting and retaining primary care physicians to rural and remote locations, and strong interest in understanding the roles of alternate payment models in this.

Our first objective was two pronged; to identify what factors facilitate or hinder the recruitment and retention of rural physicians and to understand what is known about rural physician preferences for payment models and incentives (monetary and non-monetary). A focused literature review was completed to address both objectives.

There are multiple factors that influence attracting, and keeping, physicians in rural or remote settings, including personal, community, education, and policy factors. Recruitment factors influence the physician's decision to *choose* rural practice, such as interest in generalist practice and positive rural experience in medical school. Retention factors influence the physician's decision to *stay* in rural practice, and include strong connection to community, spouse job satisfaction, and social support systems. Some factors appear to influence both recruitment and retention, including rural background of physician and/or spouse, desirable recreational/social activities, and monetary and non-monetary incentives.

There were three overarching conclusions to the literature reporting rural physician preferences for payment models : 1) in the absence of other incentives, payment models are rarely cited as an important contributing factor to choosing to start and stay in rural medicine; 2) a combination of monetary and non-monetary incentives appear to best predict rural recruitment and retention; and, 3) there is consistency across discrete choice experiments in the trade-offs physicians are willing to make in order work in rural settings (e.g., income, locum relief, spousal employment/satisfaction, and desirable on-call arrangements). Noticeably missing from this literature is qualitative analyses on rural physician preferences of payment models.

To further our understanding of the role of payment models in retention and recruitment in Alberta, we conducted interviews with Alberta rural/remote physicians. Findings from these

interviews about factors influencing recruitment/retention were consistent with the literature, including the importance of professional factors such as variation and scope of practice, and attractiveness of rural living. Physicians emphasized the challenges associated with rural/remote practice, which may impact retention, including poor locum support and heavy on call burden, as well as the challenge of a complex patient panel. Our findings highlight that payment models play a limited role on their own in addressing these challenges, but that they might support recruitment / retention by attracting additional physicians to rural areas which might help with the workload and on call burden, and by facilitating a collaborative, "team-based" care model that can optimize where physicians spend their time. Physicians stressed that distrust in government might impede their considerations for alternate payment models, but that this could be mitigated by adequate physician involvement in the development of the contracts to ensure fairness.

Given the findings from this report, we provide five considerations: 1) focusing attention on non-financial barriers through professional support to reduce on-call hours; locum coverage; appropriate access to specialist support; robust virtual health; and support systems in place to enable community integration; 2) Including rural physicians in the development and implementation of alternate payment models to ensure they are considered flexible, fair, and tailored to specific needs of the community; 3) Avoiding perverse incentives of all payment models by ensuring accountability mechanisms are in place for all physician payment models; 4) Advertising alternate payment options by highlighting ability to tailor to local circumstances, transparency and trust, flexibility, income security, and team-based care; and, 5) Targeting physicians most likely to remain in rural settings (e.g., those with rural backgrounds), rather than incentivizing recruitment for physicians unlikely to remain long-term (e.g., internationally trained physicians).

2 Overview

Partnering with the HTA Unit, a policy report was developed. The proposal was funded by the SPOR Evidence Alliance, with co-funding from a CIHR foundation grant. The overarching objectives of this report are to:

i. conduct a focused literature review on:
    a. factors that facilitate or hinder the recruitment and retention of rural physicians,
    b. rural and remote physician preferences for payment models and incentives (monetary and non-monetary)
ii. Report the perspectives of Alberta rural physicians on factors that influence recruitment and retention (fee-for-service and alternate payment models) through key informant interviews.

To address the objectives of this report, we employed several methodologies (Figure 2). To address the first objective, we conducted a broad search of rural physician recruitment and retention literature over the past 10 years in five databases: MEDLINE, CENTRAL, EMBASE, Cochrane Database of Systematic Reviews, and EconLit. Terms aimed to capture the population of interest such as “physician”, “general practitioner”, “doctor” were combined with intervention/outcome terms such as “recruitment”, “retention”, “incentive” and “compensation” using the Boolean Operator “and.” Additional terms were used to limit to rural and remote studies. To address the second aim, interviews were conducted with physicians working in rural/remote communities in Alberta. Thematic analysis was conducted to provide insight on rural physician’s perceptions of payment models in Alberta.

This report identifies factors that could be considered as Alberta continues initiatives to improve the recruitment and retention of physicians in rural or remote settings, including exploring the role of alternate payment models.

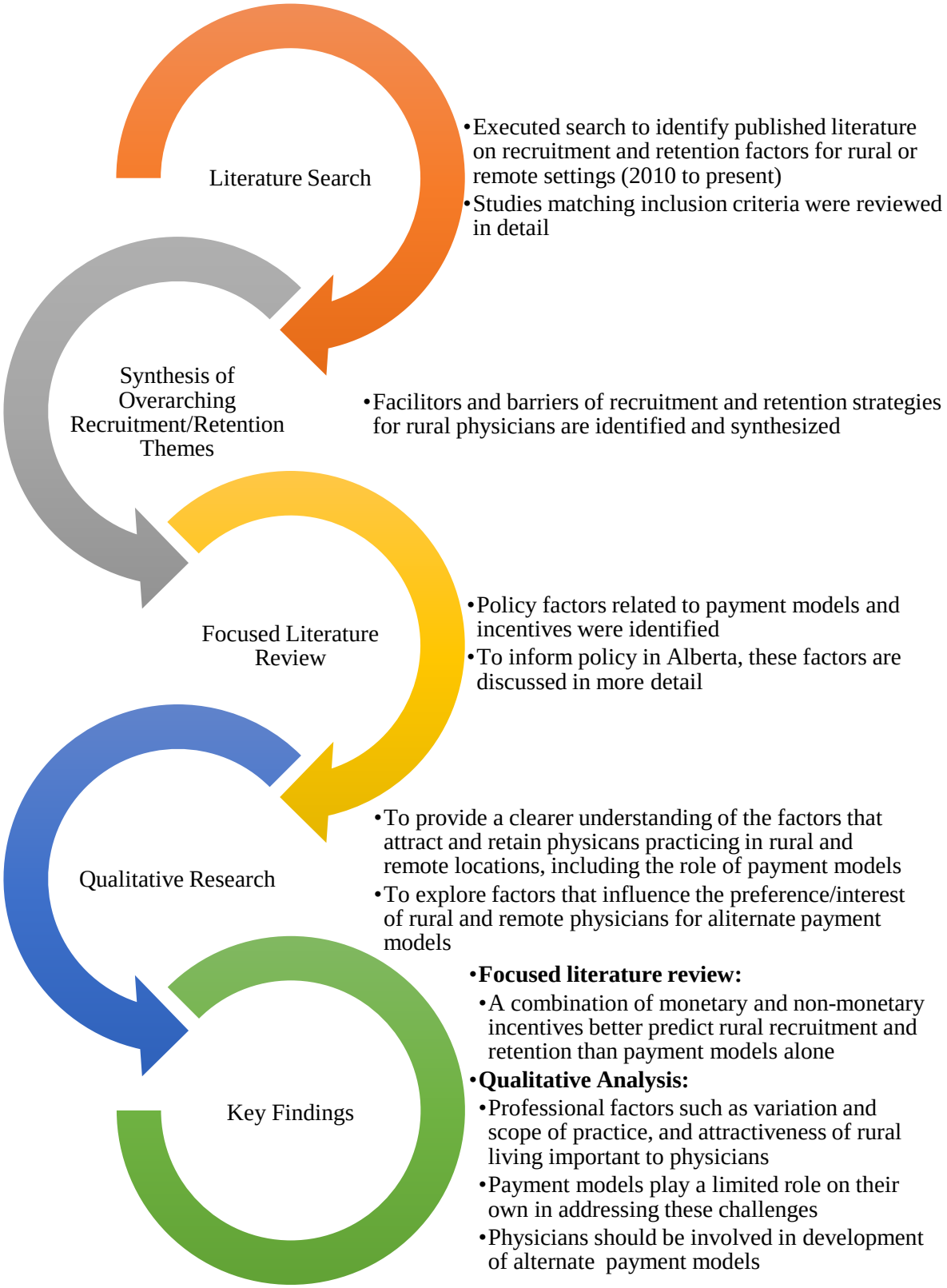

Figure 1. Overview of Approach

3 Indigenous Peoples as Members of Rural & Remote Communities

The *Review of Family Medicine Within Rural and Remote Canada: Education, Practice, and Policy* document from 2016 highlights the need for particular attention to Indigenous communities, stating that the Indigenous population in Canada continues to have their complex needs unmet, citing that rural physicians in these communities should possess cultural competencies and provide cultural safety in their practice.[1] While these needs are imperative to Indigenous communities and Canada as a whole, it was beyond the scope of this report to provide the appropriate context to explore other research, literature and knowledge related to rural or remote Indigenous communities. Moreover, research involving Indigenous peoples in Canada has been defined and carried out primarily by non-Indigenous researchers, in ways that have not reflected Indigenous world views or benefited Indigenous peoples and communities. Given the fact that research involving Indigenous peoples in Canada has historically been harmful and extractive, and given the fact that many Indigenous researchers, organizations and communities across Canada are leading important work in health services and research, we acknowledge that Indigenous researchers, organizations and communities would be best positioned to advance the needs of indigenous communities.

4 Focused Literature Review on Facilitators and Barriers to Rural Physician Recruitment and Retention

4.1 Introduction

The health disparities between urban and rural populations in Canada are well documented.[2,3] There are many catalysts influencing these health disparities, including the possibility that a shortage of family physicians in rural and remote communities contributes[2]. Regardless, given these health disparities, having a strong primary care presence in rural communities is critical. The proportion of the population living in rural communities in Alberta and Canada are 16.4%[4] and 18.7%[5], respectively. This is not matched by the proportion of family physicians practicing in rural settings (12.9% and 13.1% respectively)[6] (2016 estimates). One of the main drivers of this mismatch is the difficulty in recruiting and retaining physicians to these rural communities.

The interest in physician recruitment and retention in rural or remote communities is not new. There are decade's worth of evidence supporting strategies to increase and improve recruitment and retention, including global policy recommendations by the World Health Organization.[7] Factors influencing the decision to practice outside urban centers are abundant and multifaceted. Based on current theoretical thinking and published literature, for the purpose of this policy report, we have divided these factors into four main themes: personal, community, education, and policy (Figure 3). Understanding the interrelation between these main factors can influence recruitment and retention strategies to facilitate an increase in family physicians choosing rural practice, and simultaneously mitigate barriers.

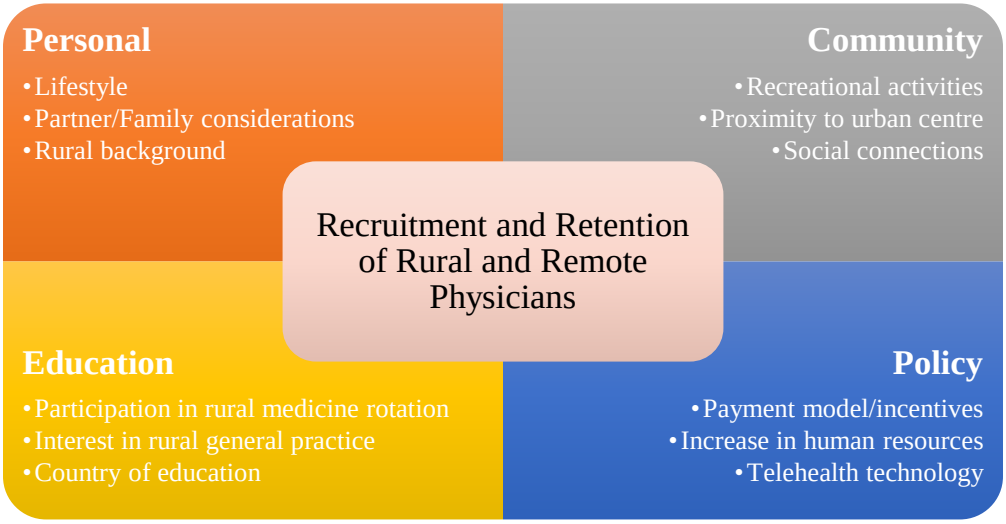

Figure 2. Themes of factors that influence the barriers and facilitators for recruitment and retention for rural and remote physicians

There is substantial overlap between the main themes of recruitment and retention factors; however, there are notable differences in the mechanism of the strategies. Recruitment strategies aim to *attract* family physicians to choose rural settings, while retention strategies aim to *keep* rural physicians once they have integrated into the community and established their practice. Within each of the four main themes/levels, there are facilitators, or "pull" factors, and barriers, or "push" factors" for both recruitment and retention. For example, having a rural background may act as a "pull" factors for recruitment. However, after establishing life and career in a rural community, having a spouse that was unable to secure a fulfilling career, may act as a "push" factor for retention (Figure 4). Furthermore, the importance or impact of these factors may differ amongst physician demographics such as sex, age, and country of medical education. For example, physicians who acquired training from an international medical school may use a rural position as a stepping stone into the Canadian system (e.g., a recruitment "pull" factor), however, their desire for urban living (e.g., a retention "push" factor) may result in leaving rural practice for an urban setting once they have established their career in Canada.

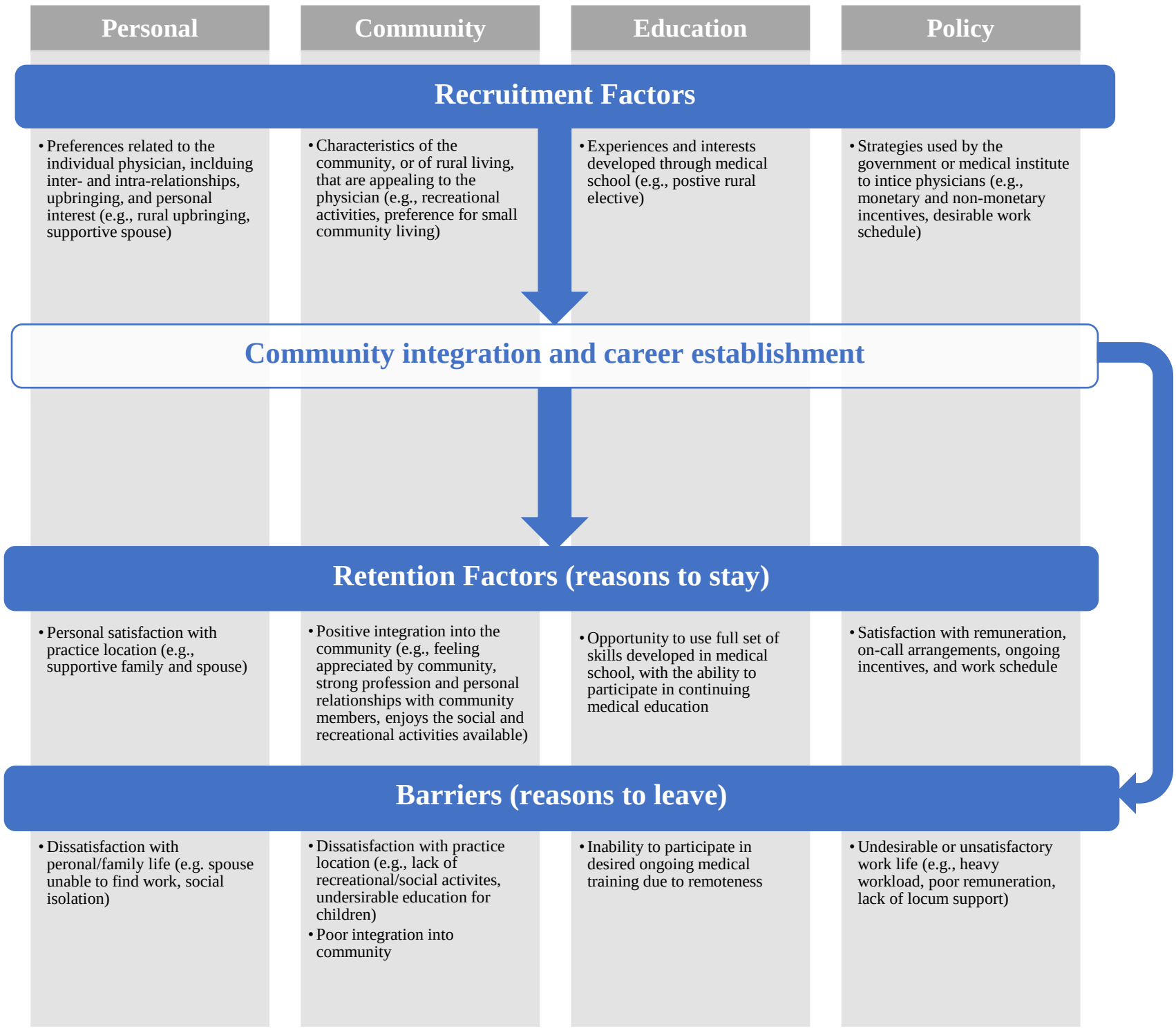

Figure 3. Description and Examples of factors for Recruitment and Retention of Rural Physicians, by Theme

4.2 What do we know about recruitment?

Recruitment strategies act as the first phase of improving retention of physicians in rural and remote settings. Successful recruitment strategies will ideally target individuals who are most likely to remain in rural setting once they have established their practice. A notable difference between recruitment and retention strategies is that, while retention strategies often target the "lived experience" of the physician, some recruitment strategies must target physician *perceptions* or *expectations* of rural practice. For example, a medical student may *perceive* that their partner will not find suitable and rewarding employment in a rural setting, which may act as a barrier to pursing a career in a rural community. However, the *lived experience* of the physician is whether their partner was able to find employment, and was supportive of staying in a rural setting.

4.2.1 Facilitators

One of the most consistently reported factors in successful recruitment and retention of rural and remote physicians is the presence of a rural background. Individuals recruited from rural areas often return to rural settings to practice as they are familiar with rural living, and understand the importance of having a connection to the community.[2,8-10] Moreover, having a spouse who has a rural background has also been cited as a facilitator of choosing rural practice.[9,11] For urban-origin medical students, a scoping review identified four main factors for choosing rural practice: response to economic forces (e.g., debt repayment incentives, lower cost of living in rural communities), scope of practice and personal satisfaction (e.g., broader scope of practice, closer contact with patients), rural training in medical school, pre-medical school mindset to practice rurally.[12] It is important to note that these factors are consistently cited by physicians, regardless of their rural or urban background.[8-10] Other factors that are often reported as recruitment considerations are desirable on-call arrangements, proximity to family, and recreational activities that match the interest of the physician.[8-10]

4.2.2 Barriers

Barriers to recruitment for rural practice lay primarily in the urban experience of the physician, and the perception of rural living and practice. On a personal level, physicians cite desire for urban living, reduced social/recreational activities of interest, perceived difficulty in spousal

employment, and distance from friends and family (e.g., social isolation) as barriers to choosing rural practice.[10] At the community level, community integration (e.g., developing a connection to the community) hinders recruitment.[10,13] Negative or inadequate rural medicine experience/electives in medical school, perceived low quality facilities, and perception that rural physicians are less qualified than urban physicians are all cited as education- and policy-related barriers to choosing rural practice.[10]

4.3 What do we know about retention?

Successful retention strategies encourage physicians to integrate and adapt to their rural community, and establish their practice. It is important then to have successful retention strategies in place to facilitate and support physicians to stay in their rural community after their initial period of employment.

4.3.1 Facilitators

As with recruitment factors, having a rural background is consistently cited as a facilitator to rural physician retention.[2,9,14] This may be interrelated to an appreciation and attachment to the community,[14] a sense of duty to serve the community,[15] and a preference for the rural recreational activities available.[9] Additional personal and community-level retention factors include: proximity to family, spouse satisfaction and job security, and sufficient community to raise children.[9,10,15] Practice and policy-level retention factors include the ability and support to practice using the physician's full skill set, often having the opportunity to perform procedures that are reserved for the specialists in larger urban centres.[2,9,11] Incentives such as debt repayment and increased paid annual leave seem to be cited less often than non-incentive related factors,[8,11] nonetheless, are important considerations in retaining rural physicians (more detail in Chapter 4).

4.3.2 Barriers

Retention barriers, or reasons to leave rural practice, differ from recruitment barriers as they are based on the lived experience of the physician, including their integration into the community, and experience in establishing their practice. Social isolation, having a spouse who is unable to secure suitable and satisfactory work, preference for urban education for children, feeling a lack of appreciation for the community, and lack of interesting recreational activities are often cited

as personal and community-level barriers to retention.[10,14] Practice and policy-related barriers include lack of locum support, leading to difficulty in securing vacation time, or participation in continuing medical education; and poor on-call arrangements.[16]

Table 1. Facilitators and Barriers cited for Recruitment and Retention of Rural Physicians

	Recruitment	Retention
Facilitators	• Interest in generalist practice • Positive rural experience in medical school	• Feel appreciated by community • Value having a mixed professional-personal relationship with patients • Strong connection with community • Spouse job satisfaction • Ability to practice full skill set • Social support systems • Adequate paid annual leave • Sense of duty/obligation to community
	• Rural background of physician and/or spouse • Desirable recreational/social activities • Monetary and non-monetary incentives	
Barriers	• Perception that rural physicians are less qualified than urban physicians • Perception of inadequate facilities • Perception that spouse will be unable to find suitable work • Inadequate or negative experience in rural medicine elective	• No connection to community • Inability for spouse to find fulfilling career • Inadequate remuneration • Poor locum support • Poor on-call arrangements • Perceived lack of appreciation for services provided
	• Desire for urban living • Isolation from friends and family	

4.4 What is known specifically about Alberta's experience?

A number of studies have been conducted in Alberta that add to the broader understanding of rural recruitment and retention (Table 4). Evidence in Alberta is consistent with national and international evidence. A 2012 study from Cameron et al.[17,18] examined retention factors cited by physicians, spouses, health care staff, and community members to inform the development of a retention framework. Participants were recruited from four diverse rural Alberta communities: i) a small southern ranching community; ii) a busy western industrial community; iii) small eastern remote community; and, iv) a northern community supported by oil, agriculture, and tourism. Using data gathered through interviews with participants, the authors suggest three domains that are all interrelated: personal retention (e.g., individual choice, spousal and family support, goodness-of-fit), professional retention (e.g., physician dynamics, physician supply, practice set-up, scope of practice), and community retention (e.g., active support, recreational assets, connection). Additionally, a unique study conducted in Alberta shed light on perceptions of physician spouses by interviewing and surveying 31 physicians and 22 of their spouses. The authors highlight the importance of joint decision-making about rural practice between the physician and their partner.[13] Considering the educational, professional, and cultural needs of physician spouses may improve recruitment in rural settings.

An evaluation of the Enrichment Program, an initiative of the Rural Physicians Action Plan (RPAP), was conducted by Gorsche et al.[19] The Enrichment Program was developed to offer and improve special skill training and upgrading for physicians practicing outside of Calgary and Edmonton. The results of this evaluation suggest that the Enrichment Program provides long-term benefits to the rural community, as five-year retention was greater amongst physicians enrolled in the Enrichment Program vs. matched un-enrolled physicians according to age, size of community, physician-type (e.g., specialist vs. family), and years of practice (relative risk of 5 year retention: 1.31, 95% CI: 1.06-1.62).

Table 2. Evidence of Recruitment and Retention of Rural/Remote Physicians in Alberta after 2010

Author (Year)	Aim of Study	Study Design	Sample	Key Findings
Cameron (2010)[17] (2012)[18]	Explore the professional, personal, and community domains of physician retention in four rural communities that retain family physicians for ≥4 years	Qualitative, collective case study	n=15 physicians (n=4 spouses, n-14 staff, n=10 community members) from four communities in AB: Southern ranching community; Western industrial area; Eastern remote community; and a Northern oil /agriculture community	• Professional themes: physician supply, physician dynamics, scope of practice, practice set-up • Personal themes: goodness-of-fit, individual choice, and spousal and family support • Community themes: appreciation, connection, active support, and physical and recreational assets
Gorsche (2012)[19]	Evaluate the Enrichment Program (EP) within Alberta	Longitudinal, matched cohort	n=29 applicants of the EP (March 2001 to March 2005) were matched with non-EP controls	• After 5 years, 100% physicians in the matched EP group remained in rural practice compared to 71% in non-EP control group (RR: 1.31, 95% CI: 1.06 to 1.62) • Six of the seven non-EP controls who left were practicing in towns of <10,000 • All physicians in EP group agreed the program should be continued
Myroniuk (2016)[13]	Understand how physicians and their spouses influence each other to make decision to select and stay in rural practice	Mixed-methods	Survey: n=31 physicians practicing in rural southern AB; n=22 physician spouses Interviews: n=6 physicians; n=5 spouses	• Approximately half of physicians and spouses reported graduating from a rural high school • More than half of the spouses reported that the decision to live rurally was somewhat/completely dependent on their physician spouse's career • Recruitment themes from physician and spouses: broad scope of practice; raising family in rural environment (e.g., safety, education, recreational activities); prior rural setting experience • Retention themes for physicians and spouses: spousal fulfillment/employment; contentment or adaptability to rural setting • Barriers: lack of privacy in small community

Abbreviations: AB = Alberta; CI = Confidence interval; EP = Enrichment Program; RR = Risk Ratio

4.5 What do we know about physician demographics?

4.5.1 Physician sex

It is unclear in the studies investigating the role of physician characteristics in rural recruitment/retention whether physician sex, or gender identity, is considered. For the purpose of this report, it is assumed that by dichotomizing physicians by "male" and "female", that physician sex is considered in the following studies.

In 2018, females accounted for 46.6% of family physicians in Canada.[6] Evidence suggests that females physicians are more likely than male physicians to be recruited to,[20] and leave rural practice,[9,21] However, there is very limited information on how physician sex, and even less on gender, may affect recruitment and retention. Qualitative studies of rural female physicians in the United States report that building a strong physician-patient relationship is a common theme identified for retention.[21,22] Additionally, studies emphasize the importance of having a strong social support system (e.g., close proximity to family, a supportive spouse), and developing a connection to the community. Some barriers identified by females are pressures to work long hours, a mismatch between personal values and community values (e.g., political or religious values), and lack of suitable career opportunities for spouses.[10,21,22]

4.5.2 Physician age

Physicians younger than 50 years old account for 50% of family physicians nationally, and 55% provincially, with nearly 30% (both nationally and provincially) being under 40 years old.[6] As physicians move through different life- and career-stages, their needs, values, and priorities may change. A limited literature notes that retention strategies should address these changing needs.[13,15,16] Younger physicians note their preferences, career path, and background of their spouse as factors carrying more weight compared to older physicians.[13,15] Younger physicians also more frequently report incentives and work-life balance as factors in choosing rural settings than older physicians.[15] Moreover, having a positive rural experience during medical school is cited more often,[16] and rated very important[10] for early-career physicians for recruitment. Older physicians report medical need of the community and desire for a challenge/adventure more often than younger physicians as recruitment facilitators.[15,16]

4.5.3 Physician country of medical education

International Medical Graduates (IMG) account for 30% of family medicine physicians in Canada;[6] however, in Alberta in 2018, 43% of family medicine physicians are IMG.[6] In comparison to Canadian Medical Graduates (CGM), IMG are more likely to move away from rural community than Canadian medical graduates.[23] In a survey of 642 physicians practicing in Canada, a greater proportion of IMG cite financial incentives (56% vs. 33% of CMG) and non-financial incentives (45% vs. 21% of CMG) as important factors for choosing and staying in rural practice.[16] In the same survey, IMG indicate that their top reason for selecting rural practice is availability for opportunity (18% vs. 6% of CMG).[16] Moreover, spouses of IMG are reportedly more dissatisfied with rural setting than the spouses of CMG, citing lack of social and community connection, and feeling isolated.[13] Lastly, evidence suggests that IMG seek employment in rural settings to set up their practice in Canada, but choose to leave once employment in an urban center is attainable.[24]

4.6 Ongoing Work

To help address rural physician shortages in Canada, the College of Family Physicians of Canada and the Society of Rural Physicians of Canada formed *Advancing Rural Family Medicine: The Canadian Collaborative Taskforce* in 2017.[2] The aim of this taskforce is to engage key stakeholders in Canada, synthesize evidence through a literature review, and complete a jurisdictional scan to inform policy implementation to address the shortage of family physicians in rural and remote communities in Canada. A 2020 update reports that progress has been made in raising awareness across Canada for the need of improved rural access to health care, developing rural and Indigenous health competencies for educating future physicians, and advocating for rural health research.[25] Progress on engaging stakeholders and carrying out evidence synthesis to inform policy implementation is still ongoing.

5 Effect of Payment Models and Incentives on Recruitment and Retention of Rural and Remote Physicians

5.1 Objective

To conduct a focused literature review on physician preferences for payment models and incentives (monetary and non-monetary) that influence recruitment and retention of rural physicians.

5.2 Methods

We completed a focused literature review to understand the preferences of rural and remote physicians for payment models and incentives in countries with healthcare systems similar to the Canadian system. We searched MEDLINE, CENTRAL, EMBASE, Cochrane Database of Systematic Reviews, and EconLit from 2010 onwards using terms such as salary, incentive and compensation combined with terms to limit to rural and remote studies.

5.3 Results

In total, we identified 2,228 abstracts resulting in 12 studies reporting on rural and remote physician preferences for payment models and incentives. Studies were undertaken in Australia (n=5), Norway (n=3), Germany (n=2), Europe-combined (n=1), and Canada (n=1). A diverse methodology is applied although nearly half (n=5) of the 12 studies are discrete choice experiments (DCE) which enable measurement and quantification of preferences.[26-28] The remaining studies are surveys (3 studies), qualitative (3 studies), and quantitative (n=1).

Table 3. Study Characteristics of Included Studies (n=12)

Author (Year, Country)	Study Description	Key findings
Discrete Choice Experiment (n=5)		
Gunther (2010, Germany)[29]	To quantify the preferences of young physicians for different attributes relevant to practice establishment in Germany a discrete choice experiment was mailed to a representative sample of 14,939 young physicians making a decision regarding practice establishment. The study considered professional corporation, income, career for partner, availability of childcare, leisure activities, on-call duty.	"**Income was the attribute with the largest change in level scale utility to young physicians. Indeed the marginal rate of substitution of the remaining attributes to income showed a considerable rise in income necessary to compensate the disadvantage in utility of a practice characterized by attributes related to typical rural areas.**"
Holte (2015, Norway)[30]	To understand doctors' preferences with regard to job characteristics, 831 young doctors who have not yet selected their specialties were asked to complete a discrete choice experiment. The study considered practice size, location, opportunity to control work hours, opportunity for professional development and income.	**"Notably, we found that the partial effect with regard to rural locations is significant and negative, implying that young doctors all else equal derive a disutility for practicing in communities with less than 5000 inhabitants.** In comparing the size of the rural location parameter with the other job attributes, it appears that the utility associated with the preferred level of each of the non-pecuniary attributes exceeds the disutility associated with rural location. These findings suggest that policy focusing on the improvement of non-pecuniary job characteristics could prove an effective instrument in circumventing the problem of the shortage of GPs in rural areas. **Results from the policy simulations illustrate that improvements in income seem to have less impact as a policy initiative to attract young doctors to rural areas, as compared to improvements in the non-pecuniary attributes**, Thus, most young doctors consider income increases (in the range explored in this study) as insufficient to compensate for poor levels in any of the other nonpecuniary attributes."
Li (2014, Australia)[31]	To examine rural GPs' preferences for different types of retention incentives, 1165 GPs completed a discrete choice experiment (MABEL study, wave 2). The study considered locum relief guarantee, GP retention payments, rural skills loading and family isolation.	"In terms of the types of incentive package that would have most impact, **a locum relief scheme would have the largest impact on improving the retention of rural doctors. An increase in retention payments has the next largest effect on the probability of attracting GPs to stay in rural practice.** A 10% or 20% rural skills loading was also an important factor influencing retention, especially for GPs who work in hospitals in rural areas. Finally, although the subsidy of school fees was not significant overall, it was important for those GPs with dependent children."

Author (Year, Country)	Study Description	Key findings
Scott (2013, Australia)[32]	To examine the preferences of GPs for the characteristics of rural practice, 3873 GPs completed a discrete choice experiment (MABEL, wave 1). The study considered earning, hours worked, on-call arrangements, location, opportunities for social interaction, arranging a locum on short notice, practice team, average consultation length.	"This showed that the compensation depends on the characteristics of the job in the rural area, and how trade-offs are made. Jobs perceived to offer more attractive attributes require lower incentives. For the least attractive rural job according to our attributes, we estimate that a minimum of $237,002 additional annual earnings would be required to pay the average GP. For rural jobs that have 'better' levels of other attributes, the payments required would be smaller."
Witt (2017, Canada)[33]	**To assess the financial value and the importance overall and relative to each other of pecuniary and nonpecuniary factors that are known to affect rural recruitment and retention, 561 physicians completed a discrete choice experiment. The study considered income, hours worked, spousal employment opportunities, on-call, type of practice, rural training, community incentives, housing availability and clinical technology.**	**"Income, hours worked and on-call duties are among the most important attributes for recruitment and retention.** First, on-call is a significant contributor to job (dis)satisfaction; anything less than a 1-in-4 ratio was highly undesirable, while anything more than 1-in-4 (up to 1-in-6) was not worth any additional income. Physicians preferred group practices to hospital-based and solo practices, with group practices being the most preferred. Physicians working in a hospital-based practice would need to be compensated 19% of annual income to work solo, and physicians in a group practice would need over 30%. Community incentives during the year were worth 11% of annual income, and clinic technology that includes both electronic medical records and telehealth, 16%. Hours worked was important: 1 additional hour was valued at $183, and hours worked also played a consistent role in the job satisfaction questions. The imputed average hourly wage in the sample was $134, so additional hours were valued about 37% above the average gross hourly wage."
Survey (n=3)		
Halvorsen (2012, Norway)[34]	To explore Norwegian GPs' preferences for organization and remuneration schemes eight years after the implementation of private practice, 3270 GPs were asked to participate in an online survey. The outcomes of interest were the GPs' current and preferred organization and remuneration schemes. Mutually exclusive response options were (1) private practice in which the GP holds office space, equipment, and employs the staff, (2) private practice in which the GPs hire office space, equipment, and/or staff from the municipality, (3) fixed salary with bonus arrangement, or (4) fixed salary only	"52% preferred private practice in which the GP holds office space, equipment, and employs the staff; 26% preferred private practice in which the GPs hire office space, equipment, and/or staff from the municipality; 16% preferred fixed salary with bonus arrangement 6% preferred a fixed salary only."

Author (Year, Country)	Study Description	Key findings
Holte (2015, Norway)[35]	To identify the extent to which GPs' preferences for private practice vs. salaried positions changed, the 2009 survey (described in Halvorsen above) was compared to the same survey administered in May 2012.	"GPs' preferences for private practice vs. salaried positions have changed substantially in the last few years, with a significant shift towards salaried positions. Young and female GPs are overrepresented among those who prefer salaried positions. However, this is not found to be statistically significant after controlling for other characteristics in the multivariate regression analysis. **Thus, gender differences in the other variables (e.g. list size and income) seem to explain why females are more inclined than males to prefer salary."**
Russell (2012, Australia)[36]	To measure the relative strength, significance and contribution of factors associated with rural and remote medical workforce retention, the results from 1189 physicians who completed a discrete choice experiment (MABEL, wave 2) and 4223 GPs who completed the National Minimum data set were combined. Both datasets included de-identified unit level data for GP length of stay in current practice and age, gender, geographic location, total hours worked per week, on-call availability, weeks of annual leave taken and the business or primary income structure under which each GP worked	"The most important factors associated with GP retention at a specific practice location, having adjusted for the effects of GP age, are **business structure, income source [(e.g., payment model)]**, registrar status, hospital work and restrictions on practice location. The remaining variables, including geographic location, procedural skills, annual leave, total hours worked and practice size, whilst statistically significant, collectively explain only a small additional proportion of the variance in retention of rural and remote GPs and are thus less important. **The evidence supporting the significance of gender and GP availability for on-call work was mixed, whilst IMG status, practice type and proximity to the coast or to private schools were not significantly associated with GP retention after adjustment for other factors."**
Qualitative (n=3)		
Allen (2020, Australia)[37]	Qualitative study with 22 medical specialists aimed to describe the factors that contribute to specialist workforce retention and attrition within a regional health service. 12 of the participants had stayed in rural practice while 8 had left and the remaining 2 intended to leave.	"**Financial remuneration was not a primary factor in retention decision-making**. However, there was acknowledgement that health services have a responsibility to ensure equitable pay scales. **Flexible employment contracts**, including statewide positions, rural bonuses, **flexible leave arrangements and financial incentives for efficiency and performance**, were also suggested as ways to improve retention. The implementation of such flexible contracts offering efficiency incentives is inhibited by the health services award and employment law. However, despite these potential limitations, specialist feedback should be sought, with the aim of increasing flexibility and improving retention."

Author (Year, Country)	Study Description	Key findings
Natanzon (2010, Germany)[38]	To explore the 'pros and cons' of GPs' work in rural areas, 16 interviews were conducted with GPs.	"Three main categories were derived from the interviewees' discussion: personal level, professional level and regional/structural level. Most of the positive aspects were found on the professional level: a higher regard for the work of a GP making the profession of being a GP in a rural area attractive. This combined positively with a low level of competition, a higher level of competence and the varied work. Negative aspects were predominantly apparent on the regional/ structural level: low earnings, the lack of modern group practices and few leisure facilities were all factors highlighted negatively by the GPs."
Ozegowski (2013, European Countries)[39]	To explore the effectiveness of four different policy mechanisms in achieving a more equitable geographical distribution of GPs in European countries including (1) interventions during medical training; (2) financial incentives; (3) quotas to allocate GPs to regions and (4) capitation-based remuneration. A fuzzy set qualitative comparative analysis, a macro-comparative research method which allows the combination of qualitative, case study-based information and quantitative data in order to identify causal relations between (combinations of) conditions and outcomes, was used.	**"In health care systems that require the registration of patients with a GP, the remuneration of GPs through capitation payments has a positive effect on an equitable distribution of GPs, especially when combined with quota-based physician allocation. Financial bonuses for physicians practising in a remote or rural area and interventions during medical training have little or no impact."**
Quantitative (n=1)		
Yong (2018, Australia)[40]	To examine the effectiveness of financial incentives in attracting and retaining rural GPs, a difference-in-difference analysis was completed by exploiting a change in the eligibility criteria in July 2010 which resulted in 755 locations previously not eligible for GP incentive payments becoming eligible.	**"We find no evidence that the rural incentive program changed the overall stock of GPs in rural locations relative to metropolitan areas. GPRIP [the rural incentive program] is primarily intended to be a retention program, but our results show that it appeared to attract newly qualified GPs (recruitment) to these newly incentivized areas rather than impact on retention."**

5.3.1 Incentives

Discrete choice experiments were most often used for the studies exploring incentives (n=5), with surveys (n=3), qualitative (n=3), and quantitative (n=1) also being employed. A discrete choice experiment presents respondents with a list of job attributes and the respondent selects which attributes they prefer, or if they prefer their current job attributes (Figure 5).

Attribute	Job A	Job B
Income (gross, annual)	$250 000	$300 000
Hours worked per week	55 hours	45 hours
Spouse finding work	Acceptable opportunities	Acceptable opportunities
On-call activity	Once every 6 days	Once every 8 days
Type of practice	Solo	Group
Additional rural training	None	Periodic sessions
Community-sponsored incentives	None offered	Provided continuously while working in the community
Housing availability	Adequate selection	Limited selection
Clinic technology	Electronic medical record	Electronic medical record
Location	Rural, population 5000–15 000; more than 3-hr drive to Winnipeg	Rural, population < 5000; more than 3-hr drive to Winnipeg

1. Which job do you prefer? Job A ☐ Job B ☐

2. Which job would you choose? Job A ☐ Job B ☐ My current job ☐

Figure 4. Example of Discrete Choice Experiment Taken from Witt et al. (2017)[33]

The methodology of discrete choice analyses allows us to quantify preferences. Attributes included in DCE studies were selected based on focus group and interviews with physicians, and review of the literature. DCE attributes were consistent across studies, and included: income, hours worked per week, spousal/partner employment, on-call rotation, housing availability, practice type, clinic technology, continuing medical education/training, community incentives, locum relief, and location.

We identified one Canadian study by Witt et al.[33] that used a DCE to assess the financial value and the overall and relative importance of monetary and non-monetary incentives that are known to affect rural recruitment and retention. The 561 physicians who completed the DCE and job satisfaction questions reported that income, hours worked, and on-call duties were amongst the most important attributes for rural recruitment and retention. For hours worked specifically, one additional hour was valued at $183 (37% above the inputted average gross hourly wage) for all

physicians, and $222.56 for rural specialists. Furthermore, rural physicians willingness to pay to avoid moving from 1-in-8 on-call ratio to a 1-in-2 on-call ratio was much higher than for all physicians, indicating that rural physicians feel a 1-in-2 on-call is worth a substantial increase in salary.

A common trend in the literature is the substantial increase in earnings that would be required for physicians to choose a rural setting, in absence of other incentives[31,32,41] For example, in a study of young German physicians, the authors found that a considerable increase in monthly salary would be needed to compensate for the disadvantage of practicing in a rural setting (an additional 9,000 Euros per month; ~13,800 CAD). Scott et al.[32] estimate that an additional annual earning of $237,002 (Australian dollar) would be required for physicians to choose the least attractive rural position. Additionally, Li et al.[31] found that only 41% of Australian rural physicians would choose to stay in a rural setting with a 50% increase in payment, and no additional incentives. Even with all additional incentives such as locum relief, family isolation payments, and rural skill loading, only 67% of rural physicians in Australia were influenced to stay in rural setting.[31]

5.3.2 Payment Models

Payment models were studied in three of the identified studies. Halvorsen et al.[34] explored Norwegian general practitioners preference for remuneration schemes. The authors found that the number of patients listed and working in large municipalities were positively associated with preference for private practice versus salaried positions, while physicians in small municipalities were more likely to prefer salaried positions. Interestingly, amongst the physicians currently in private practice, the proportion preferring salary did not differ between small and large municipalities. In a follow up study, Holte et al.[35] examined preferences for private practice vs. salaried positions. The results were similar, with physicians working in small municipalities and those with few patients listed preferring salaried positions over private practice. The authors suggest that physicians in small municipalities may prefer salary because they tend to have more out of office responsibilities, which is less compatible with the private practice payment scheme (e.g., fee-for-service).

Russell et al.[36] explored factors associated with rural and remote retention using a discrete choice experiment with 1189 physicians in Australia. The authors found that, amongst other factors (e.g., business structure, registrar status, hospital work, and restrictions on practice location), income source was one of the most important factors associated with the retention of general practitioners at a specific practice location. For example, retention was higher for general practitioners paid fee-for-service versus government salaried positions.

Box 2. Definition of Payment Models

Fee-For-Service (FFS): Physicians are paid a set fee for each service rendered

Alternate Payment Model (APM): All non-FFS models are considered alternate, and include:

- **Capitation:** Physicians are paid pre-determined fees per patient enrolled per period of time
- **Salary:** A fixed regular payment, typically paid on a monthly or bi-weekly basis independent of quantity of service provided or number of patients
- **Value based payment models (e.g. Pay-for-performance):** Physician payment is based on predetermined performance measure, outputs, or targets.

5.4 Discussion

A notable finding from this literature review is that payment models are not often considered in isolation (e.g., without considering any other incentive) in the rural recruitment/retention literature over the past 10 years. With the exception of Russell et al.,[36] most studies do not report payment models to be of high importance in choosing to select and stay in a rural community to practice medicine, regardless of the model (e.g., private practice vs. salary). Rather, payment models in combination with incentives, and other factors (e.g., personal, community, and education) seem to be stronger predictors of rural recruitment and retention.

Drawing on evidence from DCE conducted in Canada, Australia, Germany, and Norway regarding incentives, there is consistency about how incentives influence rural practice. A mix of monetary and non-monetary incentives best predicted choosing and staying in rural settings. Furthermore, if monetary incentives are considered alone (e.g., increased salary/income), there must be a substantial increase to draw interest in rural practice, which is not feasible for a system that relies on public funding.

Our literature search was purposefully limited to studies from countries with health care systems similar to Canada in order to improve the generalizability of the findings. However, given rural communities in European countries differ vastly in their geographic proximity to urban centers than in countries like Canada and Australia, the decision to practice in a rural or remote setting may differ. With only one Canadian study, the generalizability of these findings may not be applicable in the Canadian and/or Alberta contexts.

Noticeably lacking from the evidence is interviews with rural physicians regarding how payment models in isolation (e.g., without non-monetary incentives) influences the decision to start and stay in rural settings. Furthermore, we only identified one primary Canadian study within the last 10 years. To gain a better understanding of how payment models influence rural physician recruitment and retention, in the next section, we report the results of a series of key informant interviews with rural Alberta physicians.

6 Interviews with Key Informants

In order to explore physician perspectives on payment models in Alberta, we conducted semi-structured qualitative interviews with primary care physicians practicing in rural or remote communities in Alberta, Canada. This study was approved by The Conjoint Health Research Ethics Board (CHREB) at The University of Calgary and was carried out from April to June 2020. The objectives of the qualitative study were:

1) To provide a clearer understanding of the factors that attract and retain physicians practicing in rural and remote locations, including the role that alternative payment models could play.
2) To determine the preferences of rural and remote physicians for alternate payment models, and what specific features are important to them.

6.1 Participants

We interviewed 13 primary care physicians (7 FFS, 5 non-FFS/alternative payment model-APM), 1 mixed payment model), utilizing a purposive sampling method[42] which allowed us to obtain heterogeneous participants. Given our objective of understanding the role of payment model in recruitment and retention of physicians to rural or remote communities, this approach ensured that we captured perspectives from both FFS and APM physicians.

Potential participants were identified through an email fan-out done by the Rural Health Professions Action Plan (RhPAP), who agreed to contact rural and remote physicians on their email list. The principal investigator also emailed rural physicians identified from the College of Physicians and Surgeons of Alberta (CPSA) website in towns offering alternate payment models, using generic Alberta Health Services, where available. Interested participants contacted members of the study team to arrange a time and date for the telephone interview. No participants dropped out of the study.

6.2 Data collection

In-depth, one-on-one telephone interviews were conducted by two experienced qualitative researchers who had no prior relationship with any of the participants. Explicit informed verbal consent was obtained from all participants through a verbal (oral) consent process approved by the University of Calgary CHREB. Interviews lasted an average of 50 minutes, ranging from 25 minutes to one hour and 29 minutes.

The interview guide (Appendix B: **Interview Guide**) included semi-structured, open-ended questions that were informed by existing literature and developed in an iterative fashion by the research team. The guide was piloted with three physicians and further refined to enhance comprehension. The questions asked physicians to describe: 1) their clinical practice and background; 2) factors that influenced their choice for rural or remote practice (including the role of payment models); 3) their preference for switching payment models; and, 4) perceptions on how payment models influence practice patterns. While the guide was focused on the specific questions underlining our research objectives, we provided opportunities for participants to expand on their views, and frequently explored their perspectives using probes and other interviewing prompts.

The interviewers took extensive notes during the interviews and engaged in memoing and peer-debriefing to formulate initial themes and to enhance study credibility.[43] The interviews were digitally audio recorded, transcribed, and then analyzed per the process described in the following section. The researchers identified data saturation (information redundancy) after eight interviews; however, we continued interviewing past saturation to validate and further enhance the development of themes.

6.3 Data analysis

Data from the interview were analyzed using the framework approach by Ritchie and Spencer.[44] The framework approach allowed a transparent audit trail by which the results have been obtained from the data, which enhanced the rigor of the analytical processes.[45] Data were

organized and managed using NVivo Version 12.[46] Two researchers coded and analyzed the data using a thematic framework.

The researchers began by reading the transcript and identifying key themes by hand, and then comparing their notes. Through this comparative process, the researchers identified and refined initial themes and identified emergent themes to group codes into meaningful conceptual categories. During the coding process, the researchers followed a hybrid deductive/inductive approach by applying these previously identified codes (deductive) while also generating new codes (inductive) to capture new and emergent themes.

The researchers met regularly to refine the codebook, compare coding decisions and ensure that consensus was achieved on coding disagreements in order to enhance credibility.[47] After coding was completed, the coded data was imputed into a framework matrix in order to identify patterns and connections within and between the themes as well as across participants. The researchers met again to review and agree on key findings from the analysis before proceeding to the write-up stage.

6.4 Participants characteristics

Table 6 describes the characteristics of the physicians that were interviewed. Thirteen physicians were interviewed. Seven participants were paid FFS, five participants were paid through an alternate payment model (APM), reflecting a good balance of FFS and APM physicians. The majority of the physicians were male (69%) and only four participants were female. In addition, 46% of the participants were early career physicians, while 54% were mid-late career physicians.

Table 4. Study Participant Characteristics

Overall (n=13)	APM (n=5)	FFS (n=7)	Mixed (n=1)
Sex			
Male	2	6	1
Female	3	1	
Career stage			
Early career	3	2	1
Mid to Late career	2	5	
Medical education			
Canada trained	1	5	1
Foreign trained	4	2	

6.5 Findings

6.5.1 What attracts physicians to rural or remote practice?

When asked about what attracted them to work in rural and remote settings, physicians in our study reiterated several themes including professional, personal, and community factors that are also well-documented in the extant literature.

6.5.1.1 Professional and Practice Factors

Physicians described a number of professional and practice factors that drew them to practice in rural regions including the scope of practice, a sense of autonomy or independence, and the strength of doctor-patient relationships. Physicians frequently noted that the broad scope of practice (that is, the variety in rural medical work) is a major draw for them to work in rural environments. Twelve out of 13 physicians interviewed noted that the broad scope of practice was important to them. The broad scope of practice in rural environments was viewed as both challenging and rewarding, and also driving physicians to keep their skills "polished" in a variety of areas.

> "*I think the variation is the most important. The variation of the practice, I think that would be one of the most important things that attracted me. I just never get bored of practicing there." (APM physician)*

Another draw to rural and remote practice relates to the autonomy and sense of independence afforded in rural practice. One physician noted, *"I think a lot of physicians who choose to work*

rurally often like it because you have more autonomy in rural set up. That's also, you can put that in one of my incentives for working rural, the autonomy that you have in a rural context which is a big problem in big centres and that lack of autonomy." (FFS physician). There was a sense that private clinics and hospitals in rural and remote regions were less bound up by "red tape" than those in urban environments: *"We've got more independence within your own private clinic in a rural setting than you would working for a clinic owner in a urban centre."* (FFS physician).

Finally, some physicians were attracted by the nature of their relationships with patients and with the community at large. One doctor explained their sense that through "deeper" relationships with patients, they could provide better healthcare and practice in line with the "philosophy of family medicine":

> *"Your interactions with patients… it's definitely deeper, and you can actually develop relationships with patients which, and you know… there's a lot of evidence that shows that that's necessary for good healthcare. It's very difficult to build a good doctor/patient relationship in big centres and in urban centres, and that's the philosophy of family medicine has always attracted me. I think it's easier to practice that in a rural community." (FFS physician)*

6.5.1.2 Community Factors

The second most common attraction for rural practice cited by physicians centered around community factors. This included specific elements such as enhanced quality of life, the appeal of a rural lifestyle, and the feeling that they were making a valued contribution to the community. These sub-themes were interconnected and sometimes overlapped with professional factors, such as patient relationships.

Quality of life factors included lowered costs of living, access to childcare and other amenities, and the "slower pace of living": *"The cost of living is generally cheaper. It's easier from a practical point of view, it's just easier to get around, so do your daily shopping, daycare, all those things are just easier in a rural versus an urban practice." (FFS physician)* Physicians also frequently commented on meaningful relationships with community members and neighbours,

and the perks of a rural lifestyle for recreation, hobbies, and raising children in a rural environment.

6.5.1.3 Personal Factors

When asked about why they chose rural and remote practice, physicians highlighted the personal factors that sometimes shaped their desire to practice in a rural area. Specifically, some physicians who grew up in rural communities felt strongly that they wished to return to a rural community to work and raise their own families. This was particularly the case when they had a spouse or partner who also enjoyed rural living. Relatedly, physicians drawn to rural practice often felt that rural environments were ideal for their stage of life; for instance, as ideal locations in which to raise children, or where they could easily access childcare. In other cases, rural environments were described as less stressful at work, and as ideal environments in which to move into retirement:

> *"To go into a rural practice was for like the end of my career. I have less stress of a major surgeries, in postop care, and it works fine. I'm basically at the end of my career. Less stress for practice at the end of my career." (FFS physician)*

6.5.1.4 Financial Incentives

Generally speaking, physicians did not describe being heavily motivated by financial incentives, although many identified that rural incentives were helpful. The sense among our participants, who described both their own, and their sense of other physician experiences, was that international and urban doctors were more likely to be attracted by financial incentives (and in some cases, to view rural practice as a "stepping stone" towards practicing in an urban environment). One internationally-trained physician noted that without the incentives offered through the international recruitment program, he would not have been able to come to Canada. Despite this, he noted that while incentives are helpful, they are not enough to keep international doctors practicing rural over the longer term: *"Historically in my community there's high turnover. So, a lot of people come here, but most use it as a stepping stone."* In describing the role of financial incentives, he said, *"It's enough to recruit people short term, it's not enough to retain people." (FFS physician)*

While Canadian-trained physicians described appreciating financial incentives, they typically emphasized other factors as attracting them to rural practice. For example, one physician explained that the financial incentives helped, but it was the rural lifestyle that really appealed to him and his spouse:

> *"The financial incentives were a part of it, not a huge part of it, but that definitely played in, and then I have a wife that wants to have lots of animals and a big garden. So, we were looking for a place we could have an acreage, but I still wouldn't have to commute for a half an hour to get to work." (FFS physician)*

The majority of participants indicated that the available payment model did not seem to be an attracting factor for them, but rather, they simply accepted the model that was available where they wanted to practice. Importantly, physicians indicated that they did not get a choice in the payment model, but rather joined the model that was already active in the community where they wanted to work. However, in a few cases, physicians noted that the payment model *did* shape their choice of where to practice.

6.5.2 Barriers and challenges associated with rural/remote practice

In describing the barriers and challenges associated with rural practice, physicians emphasized a number of challenges that were grouped into key thematic areas including: practice and professional challenges, challenges related to patient care, community challenges, family and personal challenges, and challenges around motivation/morale.

6.5.2.1 Practice and Professional Challenges

The most frequently cited challenge for rural physicians was a heavy on-call burden. Physicians in our study reported a high number of on-call hours and described the strain of this on-call burden. Specifically, doctors described the physical, mental, and emotional toll of being on call, noting that it was difficult to take time off, make other plans, or even just to get a mental break from work. Physicians told stories of being woken up frequently in the middle of the night, sleeping at the hospital more than at home, and of worrying about missing an emergency phone call while carrying out brief everyday activities including stopping into the grocery store. This

perpetual on-call burden impacted the well-being of rural physicians, who felt the demands were "tiresome" "draining", "exhausting", and "relentless":

> *"The on-call demands are tiresome. So at least we have a big enough group that on average we are on-call one 24-hour shift a week. Still that is pretty tiresome." (APM physician)*

> *"Sometimes it can be exhausting…just knowing that you are on-call for 24-hours it can be draining, I find, especially that I would be confined to the place, I cannot plan anything else during those 24-hours." (APM physician)*

Physicians perceived the heavy on-call burden as linked to staffing shortages and described these problems as potentially impacting the sustainability of rural practice. One participant noted:

> *"I think it's more, a career in a rural site is more sustainable if you are part of a team and if you've got a good afterhours workload or you can have that work life balance. Whereas if everyone is spread out in every small town with a, and every small town with a 24-hour [emergency department], I don't think that sort of after-hours call load is sustainable. Some people, I wouldn't, I couldn't be on-call every third night. I've done it before and it's just not. Loss of quality of family life and flexibility to travel, things like that, it's just not worth it to me." (FFS physician)*

Other professional challenges cited included issues relating to the challenges of keeping up with the breadth and depth of clinical knowledge required in practicing rural medicine. One participant explained described the pressure:

> *"Just trying to keep up with the level of clinical knowledge that you need to practice rurally...to make sure that you are at the top of your game knowing a little of everything, you certainly can't be an expert in everything, but being, knowing enough so that you are clinically confident to continue to work in these various clinical settings." (APM physician)*

Relatedly, some physicians felt that it was difficult to maintain knowledge and pursue professional development with the high time and financial costs of travelling out of rural regions for continuing education. For instance, one physician noted that the practice requirements for rural physicians are both are undervalued and under-supported in terms of professional development:

> *"The capabilities of rural hospitals are, in my experience, are undervalued...The government definitely, what I've seen, the physicians in rural practices are capable of more procedures than in urban physicians for sure. They are more hands on. They are*

well educated. They are constantly re-evaluated for their scope of practice for sure and they do it collectively. So that's basically, so it's an educational issue. There should be more, many available post-graduate education [opportunities] for rural physicians to expand their scope or to maintain their scope of practice, for sure." (FFS physician)

6.5.2.2 Challenges Related to Patient Care

Major challenges to patient care include limited or restricted access to specialists and appropriate technology and equipment. The lack of local specialists and equipment in certain regions meant that patients sometimes must travel in order to get the healthcare that they need. Some physicians felt that limited access to specialists and equipment was particularly problematic when their patient panel was comprised of individuals with complex health needs; for instance, a panel with a high concentration of elderly individuals:

"Most of the population [here] is a senior population. So, traveling around can be a concern. Unfortunately, many patients I do send referrals, for example, say for an ultrasound, we don't have an ultrasound machine here, so they have to go to [another town] which is 30 minutes away to do the ultrasound and come back. So even this simple thing can be a big concern for them." (APM physician)

The challenges of working with a complex patient panel were particularly acute when physicians felt that their time was constrained through systemic factors including the fee-for-service model and recent changes involving the government's removal (and subsequent return) of time modifiers, which allow physicians to be compensated when they spend more time with patients. Physicians working under APMs explained that they felt the APM model worked well for complex patients, as they could deal with a number of issues in a single appointment. One physician explained:

"[The APM] allows us more time to spend on the more complex patients instead of needing to pile through patients in order to ensure that the team gets paid. So, in our model we don't book as many patients a day...we are able to spend more quality time. We are flexible to refills over the phone and not require patients to come in for things that are not value-added for their care. I think overall it works well for patients and providers." (APM physician)

6.5.2.3 Community Challenges

While not a major theme, some physicians alluded to challenges with the community environment. Several physicians noted that they felt a strong duty of care to the community, and

that this sometimes impacted their work-life balance. One physician described being approached in the grocery store by a patient and called on his personal cell phone for medical advice by a total stranger who had obtained his number. Others alluded to the moral duty around feeling pressure to always be on call and available to the community. One internationally-trained physician explained that the climate was also a consideration impacting his family's willingness to stay in the community over the longer term.

6.5.2.4 Family-related and Personal Challenges

We found that many personal factors, including "stage of life" concerns – around starting a family, raising small children, accessing childcare, pursuing schooling (including moving to attend private school or post-secondary), and planning for retirement – shaped physician perspectives on the challenges of working in a rural community over the longer term. For example, two participants noted that many physicians plan to move to urban environments in order for their children to attend private secondary school and then post-secondary school.

6.5.2.5 Motivation/Morale Issues

Responses from physicians suggested that recent government changes to remuneration and policies for Alberta physicians have negatively impacted physician's morale. Specifically, physicians claimed that the removal of rural incentive programs, and the changes to rural billing codes that had led to a general "erosion of trust" in the government. This loss of trust caused physicians to question their willingness to practice in rural Alberta in the longer term:

> *"[The removal of these incentives] might actually affect my longer-term plans. It makes me think and recalculate things actually. It might alter my decision of staying." (APM physician)*

Physicians' concerns over contract changes were compounded by worries that the removal of rural incentives could lead to further difficulty in recruiting additional physicians to practice in rural environments, which would lead to even more challenges*:*

> *"If the payment is good and the physician is satisfied then there is no need to alter that, but for example by removing those incentives as I mentioned earlier then maybe physicians will start moving elsewhere and then the load on the physicians will stay or*

who plan to stay will be bigger and then they will start being dissatisfied as well and then we will end up losing physicians in rural areas." (APM physician)

Importantly, while most physicians indicated they wanted to stay in rural practice, they were less committed to rural practice in Alberta than rural practice more generally. As one physician explained:

"The recent changes have seriously (made me) reconsider the current way of practice and to look for other option, so either other option within the province or other options outside of the province. So, we've looked into moving to BC or Nova Scotia as options for our family because of the recent changes." (FFS physician)

6.5.3 Factors that facilitate retention

When asked about factors that would encourage physicians to stay in rural practice over the longer term, several themes emerged that paralleled our findings around themes in other areas. Specifically, physicians mentioned number of professional/system factors related to increased rural support, the role of financial incentives, personal/family factors, and practice factors. Overall, there was sense that when physicians felt supported in these areas, they were more likely to want to stay in rural practice. The physicians interviewed offered a number of suggestions for making rural physicians feel more valued, including increased AHS support around coordination, locums, education, spousal job placement, and a practice environment that met their professional goals.

6.5.3.1 Professional/System Factors

Among participants, the most commonly cited factors encouraging retention were those that could be largely grouped within the theme of professional/system factors; that is, increased support from AHS around a number of areas including coordination, specialist support and referrals, improved locum support, innovative medical delivery models, and education support for rural residents to attend medical school. Some physicians felt that more "respect" from AHS would help them to feel more valued for their contributions.

Physicians identified that improved regional coordination could be helpful when it comes to specialist referrals and support, which would, in turn create practice efficiencies. As noted by

one participant, "*Well, one thing [AHS could do] is developing better administrative connections between us and other, our referral regional centres*." (APM physician) For instance, some physicians described challenges in making referrals: "*We can't just, you know, refer people off like people can in city. You know, we don't work in a clinic where there's a rheumatologist upstairs and a nephrologist downstairs kind of thing.*" (FFS physician). However, other physicians lauded the existing specialist and referral system (in particular, the "telephonic rapid system") as "phenomenal". It was unclear whether physicians are experiencing the same system differently, or whether specialist support is indeed varied across the province. Regardless, several physicians felt that improved coordination support from AHS could create work efficiencies, particularly for physicians working in multiple rural communities, or who do not live in the communities where they practice. One physician explained, *"If there was someone who could like recognize that I work in these two [locations] and he works with an AHS facility and it could help coordinate some of that stuff, a bonus to me and free up some time to actually provide more coverage." (Physician with mixed payment model)*

Participants also identified that support from AHS around locum coverage would help to keep them practicing in rural areas. This was particularly the case for physicians practicing within a FFS payment model who needed to cover overhead while on holidays, while physicians under APMs typically receive paid holiday time under their contracts.

For some, the inability to recruit physicians to rural regions was a potential factor in shaping their willingness to stay in a rural region with a heavy workload over the longer term: *"We are doing [this heavy workload] now, but I don't know, and again, if the government makes it so we can't recruit other rural physicians, it will just get worse and I'll probably end up leaving." (APM physician)*

Relatedly, there was a sense that support for innovative thinking around rural medicine could help to recruit and retain physicians to stay in rural and remote communities over the longer term. Specifically, with support from AHS around how rural medicine is practiced, physicians felt that they could run their clinics more efficiently while also providing higher quality care. One participant suggested: "*There's things like virtual care, blended care, nurse practitioners,*

and it doesn't necessarily all have to be about a physician who moves into a community; there needs to be a little bit out of the box sort of thinking." (Physician with mixed payment model), *One* physician working under an APM explained that these models may play a role in supporting innovating healthcare delivery through a "robust team-based" care model:

> *"Not being tied to the rules of fee-for-service allows you to provide really robust team-based care without worrying about who gets paid. So, in an APM we are able to hire a huge team of allied health professionals as well as health professionals that are allocated to us through our [primary care network], and then we can flexibly provide care and it doesn't always have to be tied to a doctor seeing that patient in order to secure funding." (APM physician)*

Some participants noted that another possible opportunity for AHS to support robust rural medicine is through improved access to medical school for rural residents. One doctor explained: "*75% of people that come from rural areas go back to rural areas, so they need to [implement] programs for rural residents, for rural kids to go to, to maybe go to [medical] school." (FFS physician)*. This suggestion is consistent with the literature which supports the idea that a rural background encourages rural practice and long-term rural retention.

The issue of morale and trust in government seemed to also impact physician perspectives on retention. Several physicians interviewed indicated that "respect" for rural physicians in general would help to retain doctors in these regions. As noted, rural doctors must not only bear a heavy on-call burden, but they must also maintain an up-to-date skill set while also taking on varied, complex and sometimes risky cases. Given such high demands, some physicians felt that the government "undervalued" their work. When asked what the government could do to support rural retention, one physician explained,

> *"Well, basically, to have more respect for a remote, rural specialist, more in general… The rural hospitals have basically, in my experience perfect and more than average experience in nursing and paramedic staff than in regional or academic hospitals. And, so basically [they] undervalue the capabilities and expertise in rural hospitals." (FFS physician)*

Overall, there was a sense that different rural regions may receive different levels of support from AHS, and physicians in regions receiving less support were more likely to express that they felt a lack of respect, evidenced by some hospitals having old or outdated equipment. For these

physicians, a lack of up-to-date equipment not only made the job more difficult, but also meant that they had to more frequently refer their patients elsewhere. On the other hand, when physicians had access to up-to-date equipment, they felt valued and supported. One doctor who felt particularly supported explained:

> *"A lot of rural centres don't have equipment. They don't have the budgets to maintain their facilities and you know, I do anesthesia here and I have the same anesthetic machine that the specialist keeps using in the city in their operating rooms… So very few places get that right and because it's a public health system and so small hospitals benefit from big contracts, so we don't have to buy one expensive anesthetic machine and AHS buys 500 of them or whatever, and we get [some], so we are part of a much bigger organization. So, you've got that support." (FFS physician)*

6.5.3.2 Financial incentives

Another common theme around retention related to financial incentives to practice in rural and remote regions. Physicians indicated that financial programs for rural doctors, including retention bonuses as well as unique billing codes (time modifiers), were important to maintain in order to keep physicians practicing rurally. Importantly, physicians seemed to indicate that financial incentives were not enough on their own, but that they supported physicians feeling valued. There was also a sense that rural incentives played a critical role despite the fact that they had "diminished" over time:

> *"You know, just having the incentives, and I know that even compared to what some of my colleagues had 10 years ago, the incentives have been diminished. But you know, it definitely helps having a rural, remote program so that we are getting compensated a little extra for the work that we do just because it is a little bit more challenging." (FFS physician)*

In other words, physicians felt that financial incentives were important to keep in place as a means to feel valued and to help them to cope with some of the challenges of working in rural environments. As previously noted, physicians were clear that the removal of incentives might impact their willingness to stay in rural practice over the longer term.

6.5.3.3 Personal/family factors

Physicians noted that government support around family and personal matters could help them to not only relocate, but to make the move a long-term or permanent one. One physician explained

that she had received support informally from community members who wanted to help her husband find a job, and that government support around spousal careers could be beneficial. A small number of physicians suggested that some communities may present ideological challenges that could hinder recruitment and retention. One community was described as very religious, which has the potential to be either attractive or a deterrent to potential physicians (depending on their own religious beliefs and values). One physician explained:

> *"We recently had a physician leave sort over an ideological difference, but also you know, I think from the point of view of like, I think a religiously diverse physician group is kind of nice in the sense that not everyone has to work their religious holiday then, right, you have a variety of people working together, it's better. But, I definitely have had patients who come from sort of more diverse backgrounds and some of them have said to me, you know, I just don't feel like I belong in this place, no one else here likes me, I'm going back to Edmonton or Calgary. Rural southern Alberta, you know, some people can be very close minded, this is the thing, so. I can see why that would happen." (011)*

In other cases, some physicians described the perception of a small-town mindset in rural communities, which could be a potential deterrent for potential physicians to practice in rural environments.

Another factor related to retention included physicians' commitment and investment in the community. When physicians had practiced in an area for a while, they were clear about the strong relationships they had built there. This was sometimes a factor that kept them practicing in rural communities, even when family members wanted to relocate: "*I want to stay, I've got no, like I said, I'm heavily invested in this community, I don't want to move anywhere, I will need to be pushed. You know, I don't think anything will pull me out of here."* (*FFS physician*) While investment in the community is not within the direct control of AHS, it is important to acknowledge that community integration can be a factor motivating physicians to stay.

6.5.3.4 Practice Factors

Finally, physicians noted that factors related to how they practice medicine were helpful in motivating them to practice rurally. Specifically, the same factors that drew doctors to rural communities – the wide scope of practice, strong relationships with patients, and a sense of making a difference in the community – were identified as practice factors that made them want to stay.

6.5.4 Role of payment models in retention

In addition to potentially playing a role in recruitment, payment models may also play a role in retention based on the potential impact of the payment model on their practice. Across the board, physicians were interested in payment models that would afford them flexibility and autonomy in their practice, which would in turn allow them to create practice efficiencies. Physicians identified that APMs, in particular, could afford more flexibility in how medical care could be delivered (for instance, physicians may be more incentivized to see patients for fewer, but longer visits; conduct phone follow-ups in place of in-person appointments; or delegate work to Nurse Practitioners or other allied healthcare workers), freeing up more time for physicians to see the patients "who really need to see a doctor". Several doctors explained that the "whites of the eye principle" (seeing a patient in person) commonly implemented in the FFS model was inefficient and did not necessarily provide good quality patient care. Physicians working under "team-based" APMs felt that these models both delivered high quality patient care while also reducing stress for physicians. One physician explained:

> *"So, for example we hire nurses and nurse practitioners within our clinic, and they help us to manage patient care within their scope and it doesn't require that a physician see that patient each time. So, we are able to do work that really does require a medical degree and delegate tasks that can be accomplished well by an allied healthcare professional without losing funds. But, then it also allows us more time to spend on the more complex patients instead of needing to pile through patients in order to insure that the team gets paid. So, in our model we go book as many patients a day, we are able to spend more quality time. We are flexible to refills over the phone and not require patients to come in for things that are not valued added for their care. I think overall it works well for patients and providers." (APM Physician)*

Relatedly, some physicians also felt that the positive, patient-centred and collaborative clinical practice opportunities of APMs might help to recruit new physicians to rural medicine, which in turn, would positively impact the workload of existing rural physicians through reduced patients and paperwork.

6.5.5 Factors that physicians consider in decisions around payment model changes

This theme reflects the various considerations indicated by physicians in our study around their willingness to switch payment models. Overall, the majority of the physicians were open to considering other payment models. However, among those interviewed in our study, FFS physicians were more likely to be interested in trying an APM. In contrast, none of the physicians on an APM wanted to switch to FFS. APM physicians all indicated that they were, on the whole, satisfied with their payment model. FFS physicians were open to alternative payment models contingent on the government/AH addressing concerns related to contracts, implementation and administration, peculiarities of rural/remote practice, and workload. Both FFS and APM physicians shared their perspective around this theme. FFS physicians emphasized concerns that need to be addressed in the development of an APM, whilst APM physicians expressed their opinions on what the government could do to make the APM more attractive to FFS physicians.

6.5.5.1 Contract concerns

Many physicians stressed the need for 'fair' contracts to be in place for physicians to consider switching the APMs. They further expressed some concerns about potential loss of income, flexibility, and autonomy. As such, they felt that fair contracts would ensure that these concerns are addressed:

> *"So if the APM was good, if it was a good contract, I would consider staying. If the APM offered good terms of employment, so like in terms of number of days a week, or number so hours per week, number of patients that you need to see per day, and balanced with, so a good workload balance with a good income from the APM are big, because the APM has some other benefits to it such as paid leave, I would certainly consider an APM at this stage in my personal and family life." (FFS physician)*

Physicians also expressed some concerns about how APMs might work especially if they were set up to cover all types of clinical work. Most physicians felt that it was not feasible to apply one type of payment model across all clinical work because there might be a need for extra monetary incentives for certain skills sets in rural practice; for example, maternity care (and childbirth) or anesthesia. In addition, physicians stated that they would be more open to APMs if physicians were involved in conversations around the development of APMs. Physicians felt that it is important that they contribute to ongoing conversations, given that some of them on APMs

have valuable experience and inputs including what might work or not to support the development any potential new forms of APM.

Finally, a few physicians who were not willing to explore APMs indicated their reason was mainly their distrust in the government given the recent contract related changes. Physicians indicated that the current context makes them hesitant to consider new contracts over fears of sudden changes from the government without due consultation:

> *"I would be really, really hesitant just because of the complete erosion of trust with this government…I think if you are looking at an alternative plan generally those come with a contract term and it would be a completely one-way contract. You would be signing a contract that you are locked into from one end, but then the government can change how much you are being compensated at any time. So, I have a feeling that I would hang onto fee-for-service to the bitter end until they make it so untenable that I can't make a living with it." (FFS physician)*

6.5.5.2 Administrative or implementation concerns

Other factors commonly mentioned by physicians were administrative or implementation concerns. Physicians expressed that APMs are difficult to administer in terms of criteria required to sign up. For example, physicians who had considered joining an APM in the past indicated that they were unable to join because other physicians at their practice were not interested in joining. Similarly, physicians highlighted that allocation of funds between physicians in APM practices is often a point of conflict and requires teamwork and team agreement:

> *"When I think about trying to implement this in other places it would be really challenging. You would have to have a group that get along, a steady group that doesn't have turnover all the time. The government says they want to implement APMs more widely, but it's just not that simple. They also make it sound like they want to be the providers of clinic, but that would mean the government would have to take on the actual physical clinic space and the overhead related to that and I don't think we are near in a place where that could happen and I actually don't think they appreciate how complex that is or how much it would cost to have provincially run clinics for physicians to work in under some sort of sessional APM. I think they really underestimate the complexity of running a system like this in a rural town". (APM physician)*

Finally, a few FFS physicians articulated their concerns regarding potential financial losses associated with changing payment models, questioning what would happen or if they would be

reimbursed for the investments made for their FFS practice including building and structures. One physician said:

> *"We had to invest in, firstly, I had to borrow money, buy a building, you know, so if you want to change that payment model then, you know, you need to remember these physicians sit with assets in rural areas and how are you going to, if you APM them - what's going to happen with these structures? The government buying it over. Are they going to pay rent from you? You know, so it's got some other implications as well". (FFS physician)*

6.5.5.3 Peculiarities of rural practice and Workload concerns

Some physicians in our study believed that having only one payment model may not work for all rural/remote practices because of the distinct peculiarities of the communities. Concerns for certain communities included seasonal fluctuations in population (and therefore workload), as well as differences in the size of patient panel (number of patients per physician). Physicians stressed that the unpredictability of some rural workloads ought to be taken into consideration in designing APM contracts. Although the physicians who shared this view thought that APMs would provide secure income in such unpredictable workload contexts, they also pointed out that APMs may encourage 'free riders' and reduce productivity and physician availability for certain services (which the FFS payment model makes worthwhile):

> *"I would lose my productivity most likely. That's the big part that could happen. I'm not sure if it would, but I, to me and I'm probably at the phase where I would be very happy to take a salary and work much less and not worry about running a business and the structures around it." (FFS physician)*

6.5.6 Physician perspectives on the potential impact of APM

Some physicians shared their perspective on the impact of APMs primarily on either their practice or patient care, which were somewhat interconnected.

6.5.6.1 *Perspective on physician practice:*

Physicians expressed their views on the benefits and disadvantages the APM has on their practice. As noted in previous sections, one of the major advantages of the APM cited by physicians was that it might help attract physicians to their practice, which they deemed a good thing because it helps with the workload and on call burden – a frequently cited challenge of rural practice. One physician noted:

> *"Well I think one of the things that our APM, it's helped to attract people to us, physicians. So that's been good because we have enough people right now to share call and part of the reason, we have that is because of the APM. It's helped get people here. It's, they've told us that, that's part of the reason they've come is the APM." (APM physician)*

The other commonly cited benefit of the APM was the income security, which allowed physicians to plan and take holidays, as well as not worry about overhead costs. Finally, a few physicians described their concern around potential loss of motivation especially as it relates to their availability if they were to switch from FFS to APM.

6.5.6.2 Potential impact on patient care and the health system

Some physicians highlighted two primary benefits of APM for patient care in the sense that APM allowed physicians to spend more time with patients and provide holistic care for patients, especially those with comorbidities. Physicians that shared this perspective stressed that the APM payment model allowed them to focus primarily on the needs of the patients, as opposed to worrying about whether or not they are seeing enough patients to keep their practice running. They also emphasized that another function of the APM that facilitates this style of practice is the team-based care model, which can be easily implemented under APMs. This sometimes meant that not all patients are seen by physicians, but instead are seen by nurse practitioners. However, physicians felt that this was an efficient use of the medical system, and that not all patients or concerns need to be addressed by doctors:

> *"So I think, yeah, but I'm quite happy with the APM part of my practice and how that works for my family practice and also considering how much I work and how many other things I do, I have large, I think a large panel for a GPA. Most GPAs carry panels of 500-700 patients and I'm probably twice that, right, and the APM lets me do that. It's good value for the government." (APM physician)*

6.5.7 Physician perspective on the potential impact of FFS

Some physicians described their perspectives on the potential impact of FFS on both their practice and patient care. While this is presented as a distinct perspective in this report, it is important to note that there were logical overlaps between the subthemes, since physician practice patterns inevitably have some impact on patient care.

6.5.7.1 Perceived impact of FFS on physician practice

Physicians discussing FFS payment models highlighted several points impacting practice patterns, including flexibility (customization of work schedule), income instability, overhead pressures, and incentives to see too many patients.

Some physicians indicated that with the FFS payment model, they could customize their schedule by doing more work to make more money if they wanted or they could work less based on their availability, which made the payment model attractive to them. Some of these physicians stressed the need to make more money which was underscored by a variety of reasons, including paying off debt, pressure to keep the practice running, and making up for less stable income. For example, a few physicians expressed that they still had a lot of debt to pay and since they were willing to do the work, FFS afforded that opportunity to pick up more work.

Physicians in our study noted that FFS might create incentives in a small proportion of physicians to see too many patients, which could be addressed by regular audits: *"And, that goes for fee-for-service too, where a lot of people ride that system by stacking billing codes and just taking on way too much work which actually reduces patient care." (FFS physician).* A few others also mentioned that they were under pressure to see more patients or have more follow ups to maintain a certain income because they had to pay overhead costs to keep the practice running regardless of patient flow or fluctuations.

6.5.7.2 Perceived impact of FFS on patient care (patient access, time spent with patients, and quality of care)

There was general consensus among physicians that FFS incentivizes doctors to see more

patients, which they considered to have both positive and negative implications for patient care, including increasing access and potentially lowering care quality, respectively. A few physicians felt that because they were incentivized to accommodate patient demands, patients get to see their doctors quicker and easier, but that this sometimes led to increased paperwork:

> *"I think it (FFS) incentivizes physicians in a way that maybe long term if they, that can certainly just grow out of control where you initially start seeing 20 patients a day and then you are seeing 90 patients a day, and there are certainly physicians seeing 90 patients a day in Alberta and I've worked with them, and I don't think that's good medicine in the end". (APM physician)*

In addition, a few physicians expressed that because of the number of patients they sometimes have to see, they are more cognizant of the time spent with patients, tend to spend less time with patients, and do more follow ups because they are unable to address all the issues in one visit. For example, a physician indicated that they are constantly reminded about keeping appointments to the allotted slots and when they go over, to remember to bill for it:

> *"I think that I'm more cognizant of my, the time that I'm spending with patients when I'm working within the fee-for-service model, and some of my staff just remind me of that on a day-to-day basis. You know, I'll leave a room and I've been with a patient for 25 minutes for a 15-minute appointment and you know... [my staff] reminds, make sure you bill extra for that, right. So, I'm constantly being reminded that there's kind of a time limit on each patient, not that, that doesn't exist within our schedule in an APM, we still book within a 10-15-minute increments. Yeah, I think it's just more on my mind and I'm constantly reminded of it during my clinical day. (Physician with a mixed payment model)*

6.6 Discussion

Overall, physicians in our study seem to view the decision to pursue rural medicine as a package deal, and consider together many interrelated factors including the community itself, the clinical context, the lifestyle and quality of life afforded to them for their stage of life, and whether or not the compensation format and package makes sense for them in light of priority factors. Of these factors, physicians emphasized the broad scope of practice alongside attractiveness of rural living as the key elements driving their motivation to work in rural and remote locations. Thus, both professional fulfillment and lifestyle considerations weigh into the decision to work in a rural setting.

Physicians identified a number of challenges associated with rural and remote practice, categorized under five key themes including practice and professional challenges, family-related and personal factors, challenges related to patient care, community challenges, and issues with motivation/morale. The most commonly cited challenge was the on-call burden and heavy workload, followed by challenges relating to support around professional and practice factors including access to specialists and up-to-date equipment. There was a recognition that rural medicine is more challenging and, in some cases, necessitates a breadth and depth of skills not required in urban practice. This was both a draw and a challenge for physicians.

When it comes to retention, there was no one single factor that physicians felt would improve retention in rural communities. Financial incentives were viewed as helpful in recruitment, but as insufficient to retain doctors over the longer term. Physicians also felt that an erosion of trust in government shaped their willingness to continue in rural practice in Alberta. They expressed a sense of a lack of respect for rural physicians/rural practice, which was evidenced by limited support and/or inadequate equipment.

Considered together, it seems clear that rural physicians are looking to government to help them feel supported in several ways – specifically, through changes that would make their job easier and/or enable them to tolerate the challenges associated with rural practice. Some suggestions highlighted by the participants include support around professional and practice factors, including improved coordination and specialist support systems, support for locums, education support for rural residents, and innovative healthcare delivery options. They also emphasized that sometimes it is personal and community factors (such as stage- or "season-of-life" considerations, or spousal concerns), that shape their decision of whether or not to stay in rural practice. Thus, while government cannot control personal or community factors, maintaining and/or growing incentives and programs that make it easier to relocate and easier to practice might encourage physicians to stay longer term in rural and remote regions.

In considering changes to their payment model, physicians emphasized the importance of developing what they consider to be "fair contracts". Participants saw contracts as "fair" if the compensation was adequate and the work model supported high quality patient care. As such,

they were generally apprehensive about the "fairness" of standardized contracts. Instead, physicians emphasized that APMs ought to be developed according to the specific needs of the community, and that physicians themselves were well-positioned and informed about the specificities of rural practice that should be considered in the development of contracts. They pointed out the ways in which differences in population, geography, and even economy in rural communities necessitate tailored contracts. For instance, physicians felt that contracts should be catered to communities to account for unique challenges and constraints in some regions; for instance, population fluctuations, or a more complex or aging patient panel. They also expressed concerns about the administration and implementation of contracts; however, these concerns might be mitigated if physicians were involved in contract design in order to ensure contracts address specific concerns.

Generally speaking, physicians felt that alternate payments models may have a role to play in attracting and retaining rural physicians. This view was expressed primarily from physicians operating under APMs. In these cases, physicians perceived that certain attributes of APMs might appeal to doctors considering making the move to rural practice. Specifically, APMs may facilitate a collaborative, "team-based" care model, which was not only supportive, but also efficient. The team-based approach sometimes involved the incorporation of allied health professionals into clinical practice to spread out the workload and triage patient care such that more minor issues could be dealt with by nurses, nurse practitioners, or through phone follow-ups with physicians, while more serious issues could be reserved for in-person physician appointments.

Physicians practicing under APMs generally felt that this model afforded them the flexibility to structure their practice according to the needs of the community and/or their patient panel, which had the potential to create practice efficiencies (for instance, less paperwork and fewer office appointments) while also producing cost savings for the system as a whole. Physicians felt like this style of practice might be attractive to physicians looking to move into rural practice, and indeed, some participants noted that the payment model did in fact shape their choice about where to practice. In addition, physicians noted that APMs would provide both income security as well as paid vacation time. Some physicians felt like working under an APM would be less

stressful than working in FFS, since there is less pressure to pay overhead costs and/or to find locum coverage during time off.

Despite these appealing aspects, physicians also highlighted some potential drawbacks of APMs. The most commonly cited concerns about APMs related to the possibility that such models would accommodate "free riders" and that "hard-working "physicians would need to "pick up the slack". In other words, there was a sense that some people might be less motivated and see fewer patients, and in a team environment, others would be forced to take on additional work to compensate. Other concerns related to a reduction in autonomy or flexibility in scheduling or planning one's own work, and to the sense that APMs were "vague" and that doctors could be victim to sudden contract changes without consultation and consent.

The flexibility of the FFS model was frequently cited as a benefit, insofar as doctors (generally speaking) have the ability to work as much or as little as they like, to create their own schedule, and to take time off as desired. Since the FFS incentivized doctors to book more appointments, some physicians felt that this payment model supported patient access to healthcare. However, a number of drawbacks to FFS were raised, including the problem of system misuse (that is, physicians who "stack billing codes", see too many patients, or schedule more follow-ups than are necessary), alongside administrative challenges including increased paperwork, and concerns about earning enough to cover overhead costs. There were concerns that while the FFS system might facilitate improved access to doctors, that it could also lead to reduced quality of care overall alongside unnecessary costs to the healthcare system.

Overall, the technicalities of how physicians are paid did not seem to greatly influence whether or not they wanted to stay in rural medicine. Rather, it seems that it is the impact of the payment model on the physician's *experience* practicing medicine – that is, its impact on workload, patient care, and the ease of practice, as well as its appropriateness for the physician's personal/lifestyle priorities (for example, paying off loans, taking holidays, or planning for retirement) – that seems to play the greatest role in physician satisfaction.

Physicians in our study who indicated that they were frustrated or dissatisfied with their practice of rural medicine (including changes to their contracts and/or financial incentives), explained that they were not looking to leave rural practice in general, but rather to move to other provinces where they felt they would be more supported by government. Put differently, physicians we interviewed generally wanted to stay rural, but did not want to deal with the challenges and constraints of contract changes that make them feel undervalued and make the work more stressful. In contrast, physicians seemed to suggest that certain initiatives and efforts, such as rural bonuses, improved healthcare infrastructure and practice support, along with collaboration on payment model contracts, would help them to feel supported and valued.

The role of a strong relationship with government emerged as a key consideration in the ongoing development and negotiation of contracts and alternative payment models. Physicians astutely pointed out that distrust in government was a universal issue, and was not specific to the payment model, and could potentially impact both FFS and APM physicians (albeit in different ways). The takeaway message is that a positive, trusting, and collaborative relationship with government could facilitate the development of mutually beneficial, customized contracts under both FFS, APM, or mixed payment systems.

Limitations of this study include a small sample size, which limits the generalizability of the findings. That said, a number of factors support the credibility of our findings. Specifically, despite the small sample, information saturation was achieved after approximately eight interviews; however, the researchers continued interviewing beyond saturation to enhance confidence in the findings. In addition, the findings of this study are consistent with existing literature on factors that facilitate attraction and retention in rural practice in that attraction to (and retention in) rural practice are driven by multiple factors, which include scope and variability of practice, personal or family-related factors, financial incentives, and strong physician-patient relationships.

Considering the existing literature, the findings from this study further highlight physicians' perspectives on benefits and drawbacks of both APMs and FFS payment models in rural practice and add to our understanding of how these models might play a limited role in recruiting and

retaining physicians. The findings demonstrate the need for provincial health systems to offer both payment models in order to accommodate physician preferences, the peculiarities of rural practice, and specific community needs. However, the study also emphasizes the need to strengthen accountability mechanisms to minimize perverse incentives associated with both payment models. Finally, the study highlights the importance of a trust and collaboration with government in the development of contracts.

7 Conclusion and Considerations

7.1 Key Findings

The overarching aim of this report was to provide a clearer understanding of factors that influence rural and remote physician recruitment and retention; in particular, how physician preference of payment model (e.g., alternate versus fee-for-service) might influence their decision to choose and stay in a rural community. We identified multiple factors that affect physician's decision to *choose* rural practice, including interest in generalist practice and positive rural experience in medical school. We also identified multiple factors that affect physician's decision to *stay* in rural practice, including strong connection to community, spouse job satisfaction, and social support systems. Some factors influence both recruitment and retention, including rural background of physician and/or spouse; professional factors including autonomy in practice, and broad scope of practice; desirable recreational/social activities, and monetary and non-monetary incentives. Noticeably missing from the literature was evidence on physician recruitment and retention in rural and remote Indigenous communities.

There are many challenges associated with rural and remote practice, including practice and professional challenges, family-related and personal factors, challenges related to patient care, community challenges, and morale. Though payment models were rarely cited to outweigh all these other factors, they can be part of the package deal that includes strategies to mitigate challenges as a way of valuing and respecting physicians. Alternate payment models can facilitate a collaborative, "team-based" care model, where allied health professionals deal with issues within their scope of practice, virtual visits could be done where appropriate and physician visits reserved for more serious issues which can't be dealt with entirely by allied health.

7.2 Pragmatic Considerations

Given the findings from this report, we make the following considerations:

1. Attention must be paid to nonfinancial barriers that can be modified through health system policy, including: professional support to reduce on-call hours; locum coverage; appropriate access to specialist support; robust virtual health; and support systems in place to enable community integration.

2. Include rural physicians in the development and implementation of alternate payment models to ensure they are flexible, fair, and tailored to specific needs of the community.
3. To avoid perverse incentives of all payment models, accountability mechanisms should be in place for all physician payment models, applied in a supportive way.
4. Advertising of alternate payment options should highlight: ability to tailor to local circumstances (based on patients numbers and needs); transparency and trust; flexibility; income security; paid vacation time; autonomy; team-based care
5. Recruitment strategies should target physicians most likely to remain in rural settings, rather than incentivizing recruitment for physicians unlikely to remain long-term (e.g., IMG). Building a pipeline of physicians most likely to remain in rural settings would include targeting medical students with rural background, and positive exposure to rural experiences during training; and offering support for these physicians to establish practice in rural areas.

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Appendix B: Interview Guide

Clinical practice

1. First, I'd like to ask about your clinical practice.
    a. How long have you been in practice in general?
    b. If currently practicing in R&R: How long have you been in rural or remote practice?
        i. If prior: How long did you practice in a rural or remote location?
    c. Where do you practice now? Is it a private clinic or an AHS-run clinic?
    d. How large is your clinical group (number of physicians and nurses in the practice)?
    e. Size of practice (average number of patients per physician)
    f. What is your current payment model?
    g. Are you paid the same way for everything: (e.g. - for clinic work; emergency room work; and hospital work). If not, can you tell me how the payment model differs?

Background

1. I'd also like to ask a few questions about your background.
    a. Have you lived in any rural or remote regions in the past/prior to you joining your current practice?
    b. Where did you do your medical training?
    c. Did you do any rural or remote placements while in med school?

Factors that influence choice for rural or remote practice (including the role of your payment model)

1. Tell me about why you chose to practice in a rural/remote area. What specific factors influenced your choice to work in this region?
    a. Out of all the factors you mention, which would you say were (or are) the most important/influential reasons for your decision?

2. Did your payment model or ability to select your preferred payment model influence your choice to practice in a rural or remote region? If so, how?

3. Do you intend to remain in rural/remote practice? If yes, why?
   Probe: If no, why not?

4. How important is the payment model (or the ability to choose/change payment models) to your willingness to practice in a rural/remote region for the long term?

5. What are the biggest challenges you face in practicing in a rural/remote location?
    a. Can/does being on an alternative payment model address some of these challenges? If so how?
    b. Can/does being on a FFS contract address some of these challenges? If so, how?

6. What other factors could the government consider in making remote/rural practice more attractive to you? (which of these factors is the most important to you?)

Perspective on payment model choices and preference

7. I'd like to understand the available payment models for primary care physicians from your perspective.
    a. What models are you currently aware of (e.g., FFS, clinical APM, blended capitation; capitation, others etc?)—in Alberta?
    b. Let's go through these one by one. How does a FFS model work? How does a clinical APM model work? Etc.

8. Did you have a choice of payment model?
    a. If yes, what did you choose, and why? *(If no, go to next question)*
    b. What other payment model choices were offered to you?
    c. What factors did you consider when making your decision?
    d. Would your considerations still be the same if you were practicing in an urban center? If not, explain.

9. If you were given the option to choose your payment model, what factors would critical to you selecting a payment model? (skip question if participant answered yes in Q8).
    a. Probes: Fairness of remuneration of physicians on different payment models
    b. One payment model offers any advantage over the other?

10. You mentioned you are paid "FFS/clinical APM; Blended capitation; capitation". Have you been paid on any other payment model? *(If no, go to next question)*
    a. If yes, what prompted the change?
        b. What difference/impact did it have on how you practice (probes: care coordination, patient follow up)?

11. Have you considered changing payment models, or would you like to explore a change in payment models? If yes,
    a. What payment model are/were you considering?
    b. Why are you/why did you consider a change?
    c. What concerns/challenges do you have about joining this kind of model?
    d. For physicians paid via FFS who are considering a change:
        i. Would the APM model feasible for all aspects of your practice (e.g. clinical work, emergency room work, hospital work)? If no, why?
        ii. Would you be more or less likely to be interested in a clinical APM model if it included all the work you do (e.g. clinic, emergency department and hospital care) – assuming it was provided at a fair rate?
        iii. Do you have any concerns about including "non-clinic" work in alternate payment model?
        iv. Would your considerations for a change/switch in payment models be different if these current changes were absent (changes implementing by AH relating to contracts and fee codes)?

Perspective on the impact of payment models on practice patterns

12. How does your current payment model impact your practice?
    a. How does it enhance your practice?
    b. How does it constrain it?

c. Probe around: quality of patient care, team support, access to specialist, incentives/fee codes, flexibility etc.

13. What is your sense of how a fee-for-service payment model affects practice patterns of PCPs, compared to non-fee-for-service models?

14. Given your experience with your current payment model, if given the choice (again), would you select your current payment model or an alternative one? Why?

15. Is there anything else you would like to add, or anything I didn't ask about, but should have?