Rural Health Service Decision Guide

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Introduction

Where people live has a major impact on their health status and need for health care. About 1 in 5 Canadians live in rural areas, which cover 95% of the country's landmass. As a rural health system leader, you may have to make decisions about either delivering services locally or requiring patients to travel to larger centres. While delivering services close to home is usually preferred, it isn't always feasible or the best option. Examples of decisions you may be facing are

- Determining whether your local hospital should deliver a particular service like obstetrics or orthopedic surgery;
- Dealing with the pending retirement of a solo surgeon; and
- Adjusting your service delivery model to address changing primary care needs.

These circumstances are wide-ranging, and the decisions often come with significant political, public and time pressures. Further, you may not have the benefit of colleagues down the hall who can help you weigh the options and make a decision. It can be hard to know where to start and to feel confident that you've considered all the factors involved. It can also be hard to know when and how to have productive discussions with key stakeholders.

In the heat of the moment, there often isn't time to conduct a full-blown investigation, and there can be pressure to adopt anecdotal solutions or arrive at conclusions in the absence of a sound understanding of the issue. But decisions about health service provision are long-lasting. When making them, it's important to pause, take stock of all available data and information, and assess population need, demand for service, and alternative service options — even when your time and resources are limited.

The Rural Health Service Decision Process helps you consider the decision at hand and arrive at a practical solution in a timely manner. This guide introduces both new and experienced decision-makers to a 5-step, systematic process to making objective, evidence-based decisions for sustainably delivering health services to rural populations.

This process can help you

- Validate and quantify population need and demand for a service;
- Identify potential service delivery options;
- Assess each viable option thoroughly and systematically; and
- Consider important facets of service delivery and sustainability when making a decision.

When can you use it?

This decision-making process can help you any time you need to

- Assess a proposal to implement a service change (e.g., adding a new service, eliminating a service, reconfiguring an existing service);
- Explain a decision to local residents, a group of service providers or politicians, using objective facts and evidence; or
- Assess a decision that's already been made and determine whether further changes are warranted.

Members of CIHI's Sparsely Populated Regions Advisory Group raised the need for a resource like this to help guide decision-making. This group of senior leaders from rural regions across Western and Northern Canada asked CIHI to create a comprehensive and systematic approach to support informed decision-making in these situations. The advisory group provided valuable input and helped inform the development of this process and supporting materials. Rural health system leaders in Central and Eastern Canada provided further validation for the content of this guide.

This process helps with both assessing options and facilitating productive discussions with local residents and service providers, for whom these decisions can be personal, professional and emotionally charged. While it is designed for rural, remote and northern areas, the fundamentals are applicable to all settings.

The rural health system context

Rural populations

Compared with urban centres, rural and remote areas have a higher proportion of First Nations, Inuit and Métis residents, and proportionately fewer people from other cultural groups. Rural populations often include both more children and youth and more seniors — resulting in fewer people of working age and a greater proportion of dependents. Rural populations tend to have lower socio-economic status, higher unemployment rates and lower education levels. On average, there is a higher prevalence of chronic health conditions, poorer health status, lower survival rates and more long-term disability among rural populations. As well, there are more accidental injuries and deaths. These factors reflect some of the ways in which rural residents may have different needs for health care services than their urban counterparts.[1–4]

Rural health care

In general, rural residents have direct access to a much smaller number and variety of health services and providers than urban residents, despite having potentially higher needs. Recruitment and retention of all types of health providers is a serious challenge for many rural communities. As a result, rural residents are more likely than urban residents to report unmet health needs. In addition, the cost of providing health services in rural and remote settings is often higher than in urban areas. The extent to which a community is remote or isolated amplifies these differences and can greatly affect timely access to care.

Common rural health system challenges

Rural health systems often face

- Scarce resources;
- Fewer supports to enable providers to practise to their full scope;
- Limited transportation (emergency, inter-facility and non-urgent);
- Fragmented health system funding, management and coordination;
- Limited data, and limited ability to effectively measure quality and performance;
- Challenges with centralized health systems and decision-making;
- Limitations caused by an insufficient critical mass of providers;
- Reduced flexibility regarding staffing; and
- Difficulties in sharing health records and information.

Since it's impossible to deliver all services in all areas, rural leaders often face difficult decisions about balancing the benefits and risks of delivering services locally versus requiring patients to travel for care. Travel burden has multiple aspects and can affect an individual's willingness to access care, potentially impacting health outcomes. Decision-makers need to consider the travel burden for patients as well as providers, including travel time, cost and availability.

Travel time

Travel time to access care can vary widely when people must use multiple modes of transportation, when weather causes delays or when geographic features (e.g., mountains, lakes, rivers) increase travel time relative to distance. Travel time can have profound implications for health outcomes, particularly in emergency circumstances.

Travel cost

Travel costs for rural populations can vary widely depending on the mode of transportation needed to access care, which may include car, bus, ferry or air travel. Travel costs may be offset by publicly subsidized programs, but some residents may not qualify for these programs, which means cost remains a barrier. Travel burden may increase when family members or others must accompany patients or when travel has additional social and opportunity costs (e.g., missed work; missed family, childcare or other events). Many assistance programs do not reflect these costs, which could result in additional barriers to accessing needed care.

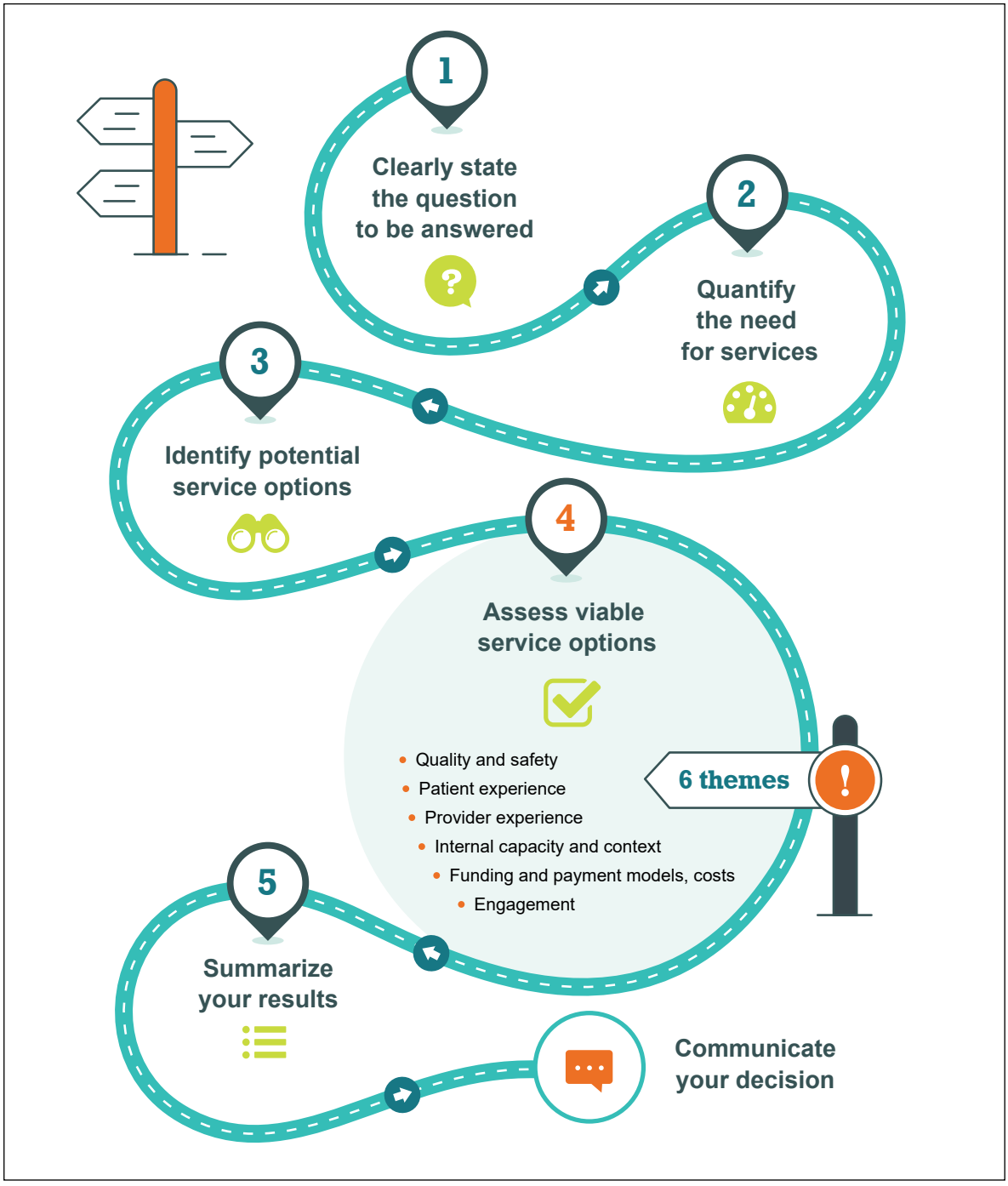
Travel availability

The availability and timing of transportation can limit patients' ability to reach needed services in a timely manner, for both planned visits and emergency situations. The burden people face when navigating and accommodating schedules for various modes of transportation, and the implications of adverse weather conditions and seasonal fluctuations, must also be considered.

For more information about the population, geographic and health system factors that affect rural health systems, see CIHI's Rural Health Systems Model.

The Rural Health Service Decision Process

The Rural Health Service Decision Process includes 5 steps, which we recommend you follow in order. As you work through the process, you may find it helpful to document your thoughts, questions and findings. You can use this process even when time and resources are tight, and you may consider involving key stakeholders in any of the steps.



About the examples in this guide

To help illustrate each of the steps outlined in the Rural Health Service Decision Process, we've included 3 examples. They cover a cross-section of situations that you may face, but there are many other types of situations where this process could be applied:

- Providing birthing services

  Residents of a small community travel out of region to give birth. As demand for birthing services is expected to increase, does it continue to make sense for residents to travel out of region?
- Delivering orthopedic services

  An orthopedic surgery service in a small community hospital is destabilized when a surgeon leaves unexpectedly. What solution will best serve the needs of local residents?
- Enhancing primary and community care

  Demand for primary care is outstripping supply, while other aspects of the health system appear under-utilized. How can new provincial funding be used to resolve this situation?

Step 1: Clearly state the question to be answered

You need to clearly and specifically state the question you're trying to answer or the decision you're trying to make — whether you're addressing an issue or opportunity — and the context in which the decision will be made.

Clearly stating the question will help you determine whether it's the right one to answer at this time. Describe the current state, the ideal future state and the issue or opportunity. It might be helpful to include the *who*, *what*, *when*, *where*, *why* and *how* of the circumstances.

What specific decision needs to be made and why?

Examples

- Providing birthing services: Step 1
- Delivering orthopedic services: Step 1
- Enhancing primary and community care: Step 1

Step 2: Quantify the need for services

Is the proposed service change aligned with population needs?

Gather evidence to better understand the need for a service or service change, and use it to characterize and quantify the current and anticipated future service requirements.

Solutions are often proposed that are based on anecdotal information which may not take into account some aspects of the broader health system context. Often, complicated or urgent situations are accompanied by strong emotions, which may be based on historical circumstances, influential and vocal opposition, and competing priorities of the broader health system and community.

The evidence you gather will help you see the need for services more broadly and objectively. If you don't have access to robust local data, you can identify reasonable proxies from similar contexts and use existing evidence relevant to rural populations and health systems. CIHI's Rural Health Systems Model can help you identify appropriate comparators based on key contextual factors.

Estimating future service requirements

Here's a frequently used approach:

1. Understand historic population-based utilization rates. You can find these using local or national data systems (e.g., hospital utilization rates available through CIHI's Quick Stats or Your Health System).
2. Considering the data from the step above, assess whether historical patterns might reflect under- or over-utilization and require adjustment to reflect a more ideal future state.
3. Apply the adjusted utilization rates to population projections (available locally or through Statistics Canada).
4. Adjust the result based on anticipated changes in service delivery (e.g., efficiencies you might expect given historic trends over time or technological advancements).

The birthing services example provides some sample calculations for an approach to quantifying service demand to inform future capacity planning.

Questions to consider

Current service delivery

- Who currently uses the service?
- How much service do they use (e.g., utilization rates by 5-year age groups)?
- Where do they access services (e.g., referral or travel patterns)?
- Is the service meeting expected quality, safety and performance outcomes?

Future service delivery

- What growth or reduction do you expect for the current population that uses the service?
- How much service do you anticipate being needed in the future, after applying your estimated adjusted utilization rates to the future population?

Anticipated changes

- Are there any anticipated changes that would affect service delivery in the area (e.g., a new hospital being built, significant change in local industry, technological advancements, opportunities to find efficiencies)?

Is the proposed service change aligned with population needs?

Examples

- Providing birthing services: Step 2
- Delivering orthopedic services: Step 2
- Enhancing primary and community care: Step 2

Step 3: Identify potential service options

Which options should you assess?

Once you have a good understanding of the population and the level and type of service need, you can focus on identifying potential service options that you could employ to address the need.

If stakeholder or advocacy groups are involved, they may have already identified a feasible service delivery approach. There are likely alternative options to consider, including the status quo.

You need to think about an array of service delivery options, including providing the service locally, delivering it in selected centres in the region or relying on other regions to provide it.

Local service delivery options could consider a range of service provider and service mode options, including

- Whether the service provider is local or itinerant; and
- Whether service delivery is in person, virtual or a combination.

In some circumstances, it may be appropriate to consider reconfiguring the way existing providers deliver services. Start by defining potential options for service delivery, then narrow down the list of options to those that are most viable.

> You may want to consult CIHI's Rural Health Systems Model to learn more about the population, geographic and health system factors that play a role in rural health services. These factors may help you identify and describe viable service options.

Questions to consider

Service delivery options

- What are the current local service delivery options (e.g., local delivery with local providers, local delivery with itinerant providers, local delivery with virtual providers)?
- What are the out-of-region service delivery options?

Viability of service delivery options

- Is the service need urgent/emergent or can it be planned and/or scheduled?
- What barriers or constraints are there on the mode of service delivery?
- Are there mechanisms to mitigate the impacts of these barriers or constraints?

> You may also wish to think about the extent to which each option satisfies the dimensions of the Institute for Healthcare Improvement's Triple Aim, or one of the various adaptations into the quadruple aim, which add service provider experience to the mix.

Which service delivery options are viable?

Examples

- Providing birthing services: Step 3
- Delivering orthopedic services: Step 3
- Enhancing primary and community care: Step 3

Step 4: Assess viable service options

How well does each option address the questions below?

Once you've identified the most viable options, the next step is to assess the options, as well as the status quo, against 6 themes. The first 3 themes are outcomes you may wish to prioritize, and the other 3 themes are inputs related to context and processes.

Themes to prioritize

Outcomes to achieve	Inputs to consider
Quality and safety	Internal capacity and context
Patient experience	Funding and payment models, costs
Provider experience	Engagement

Conducting your assessment

1. Identify the themes that are relevant to your assessment. (All 6 themes may not be relevant in every service delivery option or decision-making situation.)
2. If appropriate, assign weights to the themes to reflect their relative importance (e.g., you may have good reason to prioritize provider experience over patient experience).
3. Assess each service delivery option, as well as the status quo, against each theme you've included. You might do this by assigning plus signs (or check marks), a rank or a score. Each example in this guide applies a different approach to assessing service delivery options.
4. Step back and look at which options appear to have the most plus signs, the highest ranks or the highest score for the included themes.

This assessment doesn't have to be overly complicated or quantitative. The goal is to identify, for each theme, which service delivery options offer advantages or disadvantages over the others. To help with your assessment, you may wish to review common health system performance metrics to identify those that may be relevant to your situation. CIHI's interactive Your Health System tools offer a wide assortment of performance indicators grouped by domain to help inform planning. Additionally, you may wish to refer to CIHI's Health System Performance Measurement Framework when developing or interpreting performance measures and indicators, or to CIHI's Rural Health Systems Model to learn more about the population, geographic and health system factors that play a role in rural health services.

Key questions for assessing the 6 themes

These questions can help you assess your options against the 6 themes. You can find additional questions for assessing your options at the end of this guide.

Quality and safety

Before adding or changing any health service, you need to assess the impact on the quality of care and the experience of both patients and providers. Ask yourself questions like these:

Appropriate skills and competencies

- Are there clinical competency guidelines around the minimum procedure volumes required to maintain safety, competency, quality or licensing?
- Is there enough demand to support maintenance of clinical competencies?

Adequate human resources

- How many service providers will you need to ensure a safe and appropriate amount of care (including on-call coverage)?
- Do you have trained staff available?
- How will service providers get the training they need to maintain their competencies and ensure safety?

Cultural humility and safety

- Do all patients/clients feel safe receiving this mode of care?

Transitions/handovers

- What mechanisms are available to support handovers between providers, health services, and social-sector and community-based options?
- What means are available to provide adequate follow-up care (e.g., lab, diagnostic, therapeutic, rehab)?

Additional questions for assessing quality and safety

Rate, rank or score each option on quality and safety

Patient experience

Before adding or changing any health service, you need to consider the impact on patient experience, including things like respect for patients' preferences; coordination and integration of care; information and education; physical comfort; emotional support; involvement of family and friends; access to care, care transitions and care continuity; and travel requirements. Ask yourself questions like these:

Patient preference

- Which mode of service delivery do community members prefer?

Travel burden

- When patients have to travel to access care, what's their experience like (including time implications, out-of-pocket and opportunity costs, travel availability and travel-associated risks)?

Cultural safety and humility

- What supports are in place to enable culturally safe and linguistically appropriate care delivery?
- What role does health literacy and socio-economic status play in patients' ability to access care?

Additional questions for assessing patient experience

Rate, rank or score each option on patient experience

Provider experience

Before adding or changing any health service, you need to consider the impact on service provider experience. Think about things like travel requirements, the effect on family members, and activities like decision-making and performance management. Ask yourself questions like these:

Travel burden for providers

- Will the service provider need to travel?
- How often will they need to travel?
- How much time will they spend travelling?
- Who will pay their travel and accommodation costs?

Recruitment and retention

- Are there enough qualified and experienced health human resources available locally, regionally, nationally and/or globally to provide the service?
- What opportunities exist to develop local talent?
- What incentives (monetary and otherwise) are available to attract and retain the right people?
- What is the workload? Is it too little, sufficient or too much?
- What resources will you need to support effective recruitment?
- Are there professional practice supports to consider?
- Do the service provider's family members have needs that you'll have to address so you can retain the service provider?

Other supports

- What supports are available for service providers to develop cultural humility and provide competent, appropriate and culturally safe care for the populations served (e.g., regarding language, culture, ethnicity and religion)?
- What mechanisms are available to facilitate provider accommodation (e.g., housing supply, availability, affordability)?

Additional questions for assessing provider experience

Rate, rank or score each option on provider experience

Internal capacity and context

Before adding or changing any health service, you need to consider the organization's internal capacity (including human, physical, technical and technological infrastructure), the cultural context and organizational readiness. Ask yourself questions like these:

Infrastructure requirements

- What infrastructure changes do you need to make to deliver services (e.g., buildings, equipment, space)?
- What are the capital and operating costs of the infrastructure?
- Is there enough demand to support these costs?

Alignment with organizational priorities

- Does the contemplated service change align with organizational priorities and culture locally, as well as within the region and province or territory?
- Does the organization's leadership support the contemplated service change?

Data availability

- Does the organization have the capacity to collect all necessary data (clinical and administrative) to support the delivery, evaluation and performance measurement of the contemplated service change?

Additional questions for assessing internal capacity and context

Rate, rank or score each option on internal capacity and context

Funding and payment models, costs

Before adding or changing any health service, you need to consider the financial impact, including the fixed and variable costs associated with service delivery, and the models for funding and payment. Ask yourself questions like these:

Affordability

- How much will it cost to provide this service?
- What are the start-up costs (capital, recruitment, training) and the ongoing operating costs?
- Are the benefits enough to warrant the costs of this service change?
- Is the service change affordable?

Funding source

- Is there funding available?
- Where will funding come from for necessary training, orientation and staff onboarding?
- How will you cover costs associated with staff turnover?
- Are there cost-recovery opportunities you might consider?
- Are there cost-sharing opportunities or efficiencies to consider (e.g., for scheduling, administration or other overhead)?
- Is there an alternative approach to funding the service?

Additional questions for assessing funding and payment models and costs

Rate, rank or score each option on funding and payment models and costs

Engagement

Before adding or changing any health service, you need to consider how you'll engage appropriate stakeholder groups. Ask yourself questions like these:

Stakeholders

- Which stakeholder groups do you need to consider in the proposed service change (e.g., service recipients, service providers, suppliers, community partners, unions/ associations, advocacy groups, funders, advisory boards, educational bodies)?
- What are their interests/priorities with regard to this proposed service change?
- Which organizations or groups could serve as advisors for the design, planning, implementation and ongoing operations of the proposed service change?

Engagement approach

- Which stakeholder groups should you consult or involve in the decision-making process? At what stage and to what degree?
- What kind of input do you need from each of them?
- How would they prefer to be engaged?
- What are their communication preferences?

Additional questions for assessing engagement

Rate, rank or score each option on engagement

Examples

- Providing birthing services: Step 4
- Delivering orthopedic services: Step 4
- Enhancing primary and community care: Step 4

Step 5: Summarize your results

The final step is to summarize the results of your assessment.

You can use this summary to develop internal communications and to host discussions about the decision, as well as to support external communications with stakeholders. When constructing your summary, it's important to think about your audience, and the level and type of information they'll want to receive about the decision and its context. This summary will also be helpful for record-keeping, should you need to revisit a decision in the future. Due to the wide-ranging situations that you may assess and the various needs of multiple audiences, a template has not been developed for this step; however, you may wish to structure your summary based on the previous 4 steps of the process (including the 6 content domains in Step 4), highlighting the prominent aspects of the process that led to the preferred option.

Examples

- Providing birthing services: Step 5
- Delivering orthopedic services: Step 5
- Enhancing primary and community care: Step 5

Conclusion

Health system decision-making is complex, particularly in rural contexts. The Rural Health Service Decision Process can support you as you assess a proposed or contemplated service change. The process is intended to be thought provoking, systematic and comprehensive. But it can't possibly be exhaustive given the wide-ranging circumstances that affect rural health systems and the specifics linked to each decision.

We hope you find this process helpful and we'd like to hear about your experience using it. Please email us with your thoughts and feedback: westernoffice@cihi.ca.

Examples

Providing birthing services

The examples in this guide are fictional.

Hassim, the director of Planning for North Health Region, receives an urgent request from prominent community members of the local town, Telon Lake, demanding that birthing services be provided locally at the small 16-bed community hospital.

This request follows a series of negative experiences at Millwood Regional Hospital, which is several hours away by car.

Pregnant women in Telon Lake and the surrounding communities routinely travel long distances to give birth, resulting in significant out-of-pocket and opportunity costs to women and their families, and in costs to the health system. The travel also has potentially negative implications for patient safety and quality of care.

The community group is demanding a plan be put in place so that

- Residents will travel out of the community for birthing services under exceptional circumstances only;
- Nearly all maternity services, including pre- and post-natal care and birthing services, will be provided in Telon Lake by local resident service providers;
- There will be no out-of-pocket expenses and only negligible opportunity costs paid by residents; and
- Patient experience will be exceptional.

The community group also wants the services to consider the needs of neighbouring communities Circle and Iron Rock.

Step 1: Clearly state the question to be answered

Hassim determines that the decision at hand is focused on the following question: Should birthing services be provided at the community hospital in Telon Lake?

Back to step

Step 2: Quantify the need for services

Hassim needs to estimate the number of beds required to meet the future maternal care needs of the local population.

Hassim turns to historic utilization data, population estimates and projections to understand the local (or catchment) population's service use and future needs by 5-year age groups.

His review uncovers the following key pieces of information:

- There are 152 births per year, on average.
- The overall trend appears fairly stable.
- There is an increasing trend for mothers age 40 and older.
- There is a decreasing trend for mothers younger than 20.

Considering these age group–specific trends, Hassim performs the rest of his calculations for each age group.

Table 1 Birth volumes by maternal age

Age group	2015	2016	2017	2018	2019
15–19	7	5	6	3	4
20–24	22	21	24	25	27
25–29	45	47	51	53	52
30–34	43	48	49	51	49
35–39	15	17	21	19	23
40–44	3	4	7	4	8
45+	1	1	1	2	2

Table 2 Birth rates per 1,000 population by maternal age

Age group	2015	2016	2017	2018	2019
15–19	21.1	14.9	17.5	8.6	11.2
20–24	65.5	62.4	69.9	71.4	75.6
25–29	104.9	107.2	114.0	116.1	111.7
30–34	95.4	104.6	104.7	106.8	100.6
35–39	43.9	47.6	57.7	51.2	60.7
40–44	7.9	10.3	17.7	9.9	19.4
45+	2.4	2.3	2.3	4.5	4.4

Hassim uses 3 baseline utilization rates based on local service volumes to inform his forecast:

- The most recent year's rate (Scenario 1);
- A weighted average rate of the past 3 years (Scenario 2); and
- An average rate of the past 5 years (Scenario 3).

Table 3 Age-specific birth rates and forecasted births by age group for each projection scenario

Age group	Utilization rates			Future population	Forecasted cases		
	Scenario 1: Latest year	Scenario 2: Weighted average	Scenario 3: 5-year average		Scenario 1: Latest year	Scenario 2: Weighted average	Scenario 3: 5-year average
15–19	11.2	11.3	14.6	436	4.9	4.9	6.4
20–24	75.6	73.6	68.9	436	32.9	32.1	30.0
25–29	111.7	113.3	110.8	568	63.4	64.3	62.9
30–34	100.6	102.9	102.4	594	59.8	61.1	60.9
35–39	60.7	57.5	52.2	462	28.1	26.6	24.1
40–44	19.4	16.5	13.1	502	9.7	8.3	6.6
45+	4.4	4.1	3.2	555	2.4	2.3	1.8

Hassim also wants to see if historic utilization is within expected values so he can determine whether the population has historically under-used or over-used this service. Since the population Hassim is planning for is rural, he compares utilization against the province's overall rural utilization rate for this service, adding a fourth scenario.

This data tells Hassim that the future annual volumes for this service may range from 193 to 201 births per year. Next, Hassim needs to translate these numbers into resource utilization — in this case, use of inpatient maternity beds.

Hassim knows that the average length of stay for giving birth is just over 2 days, but he wonders if this varies by maternal age.

Hassim learns that while maternity length of stay has declined over the past several decades, it has remained relatively stable over the past 5 years. So he chooses to apply the most recent year's average length of stay to his forecasted case volumes.

Table 4 Forecasted days for each projection scenario

Age group	Average length of stay (days)	Forecasted days			
		Scenario 1: Latest year	Scenario 2: Weighted average	Scenario 3: 5-year average	Scenario 4: Provincial rural rate
15–19	2.2	24.6	24.9	32.1	21.3
20–24	2.2	167.8	163.4	153.0	113.9
25–29	2.3	251.3	254.9	249.3	243.2
30–34	2.3	231.4	236.7	235.5	254.6
35–39	2.5	151.8	143.8	130.5	145.0
40–44	2.5	48.5	41.3	32.8	33.0
45+	3.0	13.2	12.3	9.6	3.3

Now that Hassim has a few scenarios estimating total days between 814 and 889, he divides the forecasted days by 365 (the number of days in a year) to calculate bed equivalents. This estimate assumes that beds would be occupied 100% of the time, but Hassim's research shows that most maternity services in his province operate at about 65% occupancy and those in rural areas function at around 50% occupancy to accommodate demand fluctuations. Hassim chooses to apply a 50% occupancy rate to his forecasted bed equivalents.

Table 5 Forecasted bed equivalents

Forecasted estimates	Scenario 1: Latest year	Scenario 2: Weighted average	Scenario 3: 5-year average	Scenario 4: Provincial rural rate
Forecasted days	888.6	877.1	842.7	814.4
Forecasted bed equivalent (100% occupancy)	2.43	2.40	2.31	2.23
Forecasted bed equivalent (50% occupancy)	4.87	4.81	4.62	4.46

Hassim feels confident that his planning scenarios cover a reasonable range of possible futures. He sees that the range of maternity beds required is between 4.46 and 4.87.

As beds are provided in whole numbers, Hassim determines that the local population's inpatient maternity service requirement over the next 15 years is 5 beds.

Back to step

Step 3: Identify potential service options

Hassim thinks about all the feasible service options and defines the following 4:

Option 1: Status quo	Option 2: Enhance virtual care	Option 3: Upskill local family doctors	Option 4: Provide full service locally
Continue to rely on Millwood for birthing services.	Continue to rely on Millwood for birthing services and expand virtual pre- and post-natal care.	Increase the skills of community family doctors to provide birthing services at Telon Lake (including virtual support).	Provide full-scale hospital-based birthing services at Telon Lake.

Hassim knows there is no way the regional budget could be stretched to accommodate full-scale hospital-based birthing services, which would imply full obstetrical services and surgical support (e.g., for Caesarean sections). Knowing the community accepts travel for birthing services under exceptional circumstances, Hassim decides that Option 4 isn't viable.

Back to step

Step 4: Assess viable service options

Because negative patient experiences brought this issue to light, Hassim considers the theme of patient experience a high priority.

Quality and safety will likely be a top priority for all service delivery options, but the local population may be willing to trade off some safety for the convenience of having the service delivered locally.

Hassim decides to assign weights to the themes he will assess, and assigns greater weight to quality and safety and patient experience than to the other themes.

Hassim works through the questions for each theme in the guide, and makes assessments using check marks or plus signs to rate the extent to which each option addresses each theme. He decides that options that fully satisfy a particular theme will receive 3 plus signs, those that partially address a theme will receive 2 plus signs and those that minimally address a theme will receive 1 plus sign. Hassim collates his assessments for each of the viable options.

The assessment shows the most plus signs for Option 2 — but the lead is narrow. As Hassim has weighted patient experience more than provider experience, Option 2 appears to be most viable.

Theme	Option 1: Status quo	Option 2: Enhance	Option 3: Upskill
Quality and safety*	+	+++	++
Patient experience*	+	+++	+
Provider experience	++	+	++
Internal capacity and context	++	+	+
Funding and payment models, costs	++	+	++
Engagement	+	+	+

Note

* Priority themes that were assigned the greatest weight.

Back to step

Step 5: Summarize your results

Hassim decides to develop a communication about his approach and each of the options he considered, highlighting the themes he assessed and the rationale for the conclusions he's drawn. He uses this communication to facilitate discussions with his colleagues, and together they decide that Option 2 is the most sustainable service delivery option to pursue.

Back to step

Delivering orthopedic services

The examples in this guide are fictional.

Akira, the medical director of Surgical Services for the Prairie West Zone, has seen wait lists for local residents who require hip replacements grow in recent years.

The province recently announced targeted funding to reduce wait lists. Akira met with the executive team to discuss how best to apply this funding in the region and has been tasked with evaluating potential options.

The regional hospital in the largest community in Prairie West Zone has 1 established orthopedic surgeon, but he's applied for extended medical leave. It's estimated that this surgeon sees about 50% of the local patients; he is supported by a small orthopedic surgical team.

The other 50% of patients have to travel to the large urban centre approximately 5 hours away, often incurring additional expenses. They return to the area for rehabilitation, but they may need to travel again if they have post-surgical complications the local community can't handle.

Step 1: Clearly state the question to be answered

Akira summarizes the situation with the following question: How can we best meet the needs for orthopedic surgery in the Prairie West Zone given the current and anticipated volumes, the imminent departure of the local orthopedic surgeon and newly available provincial funding to reduce wait lists?

Back to step

Step 2: Quantify the need for services

Current needs

Akira has good information on the surgical services provided by the current orthopedic surgeon, but she needs additional information.

To understand the current volume and care requirements of local residents, Akira gathers

- Historical surgical reports to determine the volume and patient profiles of individuals who received hip replacements by the local provider;
- Information on the surgical services local patients received elsewhere;
- Clinical data for local rehabilitation services;
- Human resources data to understand the local complement of nurses, specialists and technicians required to deliver the current care;
- Local and regional wait list data to assess the priority level and time spent waiting for all patients in the region; and
- Provincial hospital and population data sets to understand provincial and regional age-specific service utilization. She needs this because she lacks detailed information for the specific communities in her jurisdiction.

From this data, Akira can tell that the region's population is aging at a faster rate compared with the provincial average, but that the rate of hip replacement surgery is lower than expected given this age profile.

She also looks at surgical outcomes and finds no difference for patients treated locally compared with those treated in the large urban centre. She notes that patients presenting with more complex needs are almost always referred to surgeons in the large urban centre and frequently stay longer for rehabilitation, which may mean that outcomes for patients treated locally reflect people with less-complex needs.

Future needs

To estimate future needs, Akira consults

- Population estimates, which show that the overall population is not growing, and that the population is aging (the size of the senior population — the prime age group for hip replacement — is expected to double over the next 20 years); and
- Provincial age-specific hip replacement rates.

The wait list for hip replacement surgery has grown from 42 to 49 patients in the last 2 years. Age-specific hip replacement rates available from the province suggest that regional rates are lower than expected — an indication of unmet need.

Akira also considers other aspects of the region that may influence future need:

- Agriculture is a dominant industry among the small communities, and occupational risks for orthopedic surgery among this group are higher compared with the general population; and
- In the largest community — the location of the main regional hospital — a satellite campus for the largest university in the province is being constructed; new students will be starting within the next 3 years. This expansion will include a specialist program for rural nursing and rehabilitation services. It is expected to boost the local economy with younger residents who are more likely to remain in the area following their post-secondary education.

She will need to consider these demographic, economic and training opportunities when assessing the options.

Overall view

Akira has the relevant information she needs to determine whether an expansion to the current orthopedic surgical service aligns with population needs.

The growing wait list, the potentially unmet demand and the population growth in the demographic groups driving the need for hip replacements all indicate increased need for orthopedic services in the area. The loss of the local provider demonstrates how vulnerable the region is to changes in the availability of specialized surgical services. It’s still unclear whether expanding local resources to provide this service is the best answer.

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Step 3: Identify potential service options

Akira considers several options. Beyond expanding locally delivered services, she needs to assess opportunities to recruit a temporary replacement and determine the viability of short- or long-term options to improve supports for patients who travel to receive care.

Akira knows that the surgical requirements are just one component of orthopedic services. She needs to consider the complete patient surgical pathway, including pre-surgical clinical and imaging assessments and post-surgical resources, including rehabilitation and enhanced home supports.

Akira identifies 3 options:

Option 1: Status quo	Option 2: Enhance travel supports	Option 3: Build local capacity
Recruit a temporary replacement surgeon and integrate them with the current program.	Enhance travel supports and divert current patients to non-local care. Continue to provide local post-surgical care.	Recruit permanent additional surgeon(s) to supplement care provided by the current team. Enhance local pre- and post-surgical supports.

Given the projected increase in the number of regional residents requiring orthopedic surgical services in the future, Akira knows that Option 1 isn't viable in the long term but may work in the short term.

The expansion of training opportunities in the region offers a good opportunity to recruit for surgical supportive positions locally. It may also be possible to enhance partnerships with the local university to provide additional knowledge exchange opportunities.

So Akira elects to assess the viability and sustainability of all 3 options.

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Step 4: Assess viable service options

Given the present circumstances and her projections, Akira considers how to weight the assessment themes.

She thinks all the themes are relevant to her assessment, but decides to place more emphasis on funding and payment models, costs and patient experience than the other themes. Akira likes to try to quantify things, so she gives each of the themes numerical weights (shown in parentheses in the table below).

Quality and safety are always important, but her data reveals no difference in surgical outcomes for patients treated locally compared with those treated in the large urban centre. With any of the options, patients with more complex needs will still be referred to surgeons in the large urban centre.

The expansion of the local university, and the potential for partnerships and local training opportunities, may enhance provider experience.

Akira works with 2 of her colleagues to assess the options using the questions provided for each theme. Together, they decide on weights for each of the themes and then, using a 10-point scale, they work independently to score the 3 options against each of the 6 themes.

The assessment shows that the highest scores are assigned to Option 3, with Option 2 also scoring relatively well. The higher weight assigned to patient experience also plays a role in her decision, and Akira decides to pursue Option 3.

Theme	Option 1: Status quo	Option 2: Enhance travel supports	Option 3: Build local capacity
Quality and safety (5)	10	14	19
Patient experience (10)	8	13	20
Provider experience (5)	10	16	17
Internal capacity and context (5)	9	16	16
Funding and payment models, costs (5)	11	18	19
Engagement (5)	12	18	20

Back to step

Step 5: Summarize your results

The preceding steps help Akira identify a range of reasonable options and determine which aspects of the available options are most important. Her assessment concludes that building local capacity has some important advantages over maintaining the status quo or enhancing travel supports. Akira thinks about the range of audiences that will be interested in understanding this decision — including the public, the current surgical team, the post-secondary institutions and the leadership in her own organization and the ministry. Akira documents her rationale and prepares to present her case to her organization's leadership with confidence that she's considered all the important aspects of this issue.

Back to step

Enhancing primary and community care

The examples in this guide are fictional.

Alex recently returned from a national conference for rural health system planners where she learned about a pilot program to connect rural residents with virtual services and paramedic services. The aim of the program is to take the burden off overextended and under-resourced local primary care physicians — a problem that she also faces in her region. A one-time funding opportunity from the provincial ministry is available to assist with start-up expenses for new primary and community care programs. To qualify, applicants need to demonstrate value and ensure the program is sustainable with no additional ongoing funding.

The region Alex is responsible for has a total population of approximately 100,000, with nearly half living in rural areas. More people have been retiring to the area to enjoy a quieter life with more affordable housing and outdoor recreation opportunities.

The region has 2 small hospitals (with 10 and 8 beds, respectively) and an 80-bed regional facility in the largest town that provides limited surgical and specialist services. Just outside the region, a large teaching hospital in the nearest city provides tertiary care and serves as the main referral location for regional residents.

About 10% of residents don't have a regular primary care provider — a proportion that increases in more rural areas. Rural residents often drive up to 2 hours to access care in the largest town. In the region, there are 13 primary care clinics (7 of which are located in the smaller towns), 106 family physicians and 32 specialists.

There is a regional paramedic service, but retaining staff is challenging. Low volumes make it difficult for staff to retain skills and local paramedics say that on-call pay is not adequate.

Pressures to maintain services for the distributed and aging population are increasing. Alex needs to assess the situation and determine options to meet residents' current and future health needs. Her proposal should improve access and optimize available primary and community care resources, while demonstrating both innovation and sustainability.

Step 1: Clearly state the question to be answered

Alex narrows her question down to the following: How can the region provide innovative care that will meet growing demand and make the best use of available primary and community care resources?

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Step 2: Quantify the need for services

Alex starts by understanding the current population health needs and the trends that will influence future needs. She builds an inventory of resources to quantify the need for services. This includes a previously published regional health profile that details information on the population, public health (e.g., smoking, alcohol consumption and obesity rates) and available health services.

Alex searches for updated information and finds data about her region on Statistics Canada's and CIHI's websites. She obtains information on health service and physician resourcing through her provincial ministry and reaches out to the conference presenters to obtain information on the data they used to inform their approach.

This information shows that the region is both growing and aging at a faster rate compared with the provincial average. Incomes in the region are lower, and smoking and alcohol consumption rates are higher — although they are comparable with those seen in other primarily rural regions.

Although the number of primary care physicians seems high for the population, growth in the number of physicians is not keeping pace with population increases, especially given the increase in seniors.

The physician workforce is older than the provincial average, with more physicians nearing retirement. Recruitment efforts will be needed to replace physicians who leave the workforce while appealing to newer graduates who are more accepting of newer technologies and virtual care.

Recruiting in the past has been challenged by low patient volumes and the increased need to travel throughout the region. Lack of opportunities for physicians' family members often results in higher turnover, which affects patients who may experience lack of continuity and poorer outcomes when tests need to be repeated.

Current primary care providers see a smaller number of unique patients than their peers in other areas of the province and bill for fewer services. Alex knows that of the 106 family doctors in the region, only 3 are accepting new patients. Several providers work at multiple sites, which requires physicians to work harder to coordinate care and resources.

Wait times for specialist referrals are longer for regional patients than the provincial average. There is additional burden on patients who need to travel further, organize accommodations and navigate communication between their home physician and the specialist.

Alex connects with the regional coordinator of paramedic services to discuss current and future staffing and training needs. She learns that it is difficult to manage on-call schedules and to recruit and retain staff. Those who stay and live in the area are a dedicated group who actively seek opportunities to train and develop relevant skills — often on their own time. Paramedic service volumes indicate that calls fluctuate seasonally and, although a significant proportion of calls are from seniors, call volumes and types vary in the summer when tourists and residents vacation in the area.

With 106 family physicians practising in the region and a growing senior population, Alex estimates an increase to 120 physicians over the next 5 years will be needed to keep pace. Difficulties in recruitment and retention mean that the provider experience needs to be prioritized when assessing the options.

Back to step

Step 3: Identify potential service options

Including the status quo, there are 4 options Alex considers for inclusion in the funding application.

Option 1: Status quo	Option 2: Enhanced virtual care only	Option 3: Community paramedics with enhanced virtual care	Option 4: Community health hubs to integrate physician and community care
Continue to provide primary and community care services as currently done and recruit new providers to fill staffing gaps.	Provide support to enhance connectivity and skills among current providers to expand the provision of virtual care.	Alongside enhanced virtual care, leverage community paramedics for home health monitoring to provide vital information to primary care providers.	Establish a hub network that would integrate primary care physicians in networks that provide additional services (including screening and imaging) to increase efficiency.

Regarding Option 4, Alex realizes that although building community health hubs would be a reasonable long-term solution, this option would require resources beyond those of the funding opportunity. As a result, she drops this option from further consideration. Alex chooses to assess the 3 remaining viable options.

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Step 4: Assess viable service options

Alex reviews the themes in the guide and determines that, although all of them are vital, the main objective is to ensure the proposal works within the limitations of the available funding opportunity. This means that funding and payment models and costs should rank highly in her evaluation of the options.

Patient and provider experience considerations are also high priority and necessary to ensure patient and provider burdens are addressed and the system remains sustainable.

To most efficiently meet the needs of the dispersed population and the funding requirement to demonstrate innovation, she recognizes that virtual care also needs to be highlighted. Connectivity in the region is good and, although there may be some initial reluctance from both providers and patients, she feels this can be overcome once all parties acknowledge that the advantages of virtual care outweigh any disadvantages.

Quality and safety are always of the utmost concern, but they are not always optimized in the status quo. Alex feels that emphasizing virtual care would not only enhance accessibility, it would also ensure that residents and providers could improve quality and safety through increased information flow and improved continuity. Virtual care would mean a reduction in travel burden for both patients and providers, and in-person care could be enhanced if it was limited to only visits requiring hands-on care.

Using the process, Alex assesses each of these options. She ranks each option within the themes. Her assessment shows that Option 3 has higher ranks. She also notes that a solution that combines virtual care with community paramedics would meet the funding application's requirements for innovation and efficiency. Her decision is to proceed to write up Option 3 on the application.

Theme	Option 1: Status quo	Option 2: Enhanced virtual care only	Option 3: Community paramedics with enhanced virtual care
Quality and safety	3rd	2nd	1st
Patient experience	2nd	2nd	1st
Provider experience	3rd	1st	2nd
Internal capacity and context	2nd	1st	1st
Funding and payment models, costs	3rd	1st	2nd
Engagement	2nd	2nd	1st

Back to step

Step 5: Summarize your results

With a clear idea of which option to include in her proposal, Alex can prepare the application so that it meets all the requirements and demonstrates how the proposed solution fits with the current and future needs of the population, while supporting access to care for rural residents. Following this process, she is able to articulate how the proposed option enhances the experiences of providers and patients. She is confident the proposed service changes are viable and has a clear understanding of the ways she can apply the funding to engage with the community and providers on virtual care and to build a community paramedics program.

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Additional questions for assessing your options

Quality and safety

- Is there sufficient demand to support any additional infrastructure required (e.g., buildings, equipment, space)?
- Could demand for the service exceed provider capacity or impact the ability to provide safe and appropriate care?
  - What contingencies would you need to have in place?
  - Is there risk of provider burnout?
- Do you need specific human or physical resources to support provider safety during service delivery?
- Do service providers need special or unique competencies to ensure their safety during service delivery?
  - What training and professional development opportunities are available to service providers to ensure safety and quality?
  - Can training be supported through peer support and mentorship?
- Are there best practices or preferred models of care available that you should consider (e.g., care pathways, staffing models, rotations)?
- What mechanisms do you need to have in place to ensure the psychological and cultural safety of service recipients and service providers?
- Will you measure patient-reported outcomes?
  - How will results inform service delivery?
- Does the service recipient population accept a certain degree of risk (e.g., acknowledge trading off higher safety for service convenience)?
- Do you have appropriate technical and data infrastructure to effectively monitor quality?
  - What's the incremental burden of data collection on service providers, their supports and other parts of the system?
- How will you measure and evaluate the effectiveness of the service change and the implementation approach?
  - Will you consider formative and summative evaluation approaches?
  - How will you conduct ongoing performance monitoring for the service?
  - Where will you get the data to support service evaluation and performance monitoring?
  - Are there accreditation requirements you need to consider?

Patient experience

- What burdens do patients and families face when accessing care (e.g., social, psychological, economic/financial, travel, workplace absence, child/family care, safety, social opportunity costs)?
- How will you measure patient and service recipient experience (e.g., communication, continuity and coordination, decision-making, patient-centredness, access and convenience, environment and facilities, treatment of pain or discomfort, perceived quality of care)?

Provider experience

- Are professional development and training opportunities available for providers?
  - Are there educational supports?
- What recruitment mechanisms are in place/planned to ensure necessary socio-cultural competencies?
- What role does the municipal body play in attracting, recruiting and retaining providers?
- Does the rural lifestyle have any effect?
  - How might professional isolation affect provider preferences and service sustainability?
  - What other burdens might providers and their families face (e.g., social, psychological, economic/financial, workplace absence, child/family care, safety, opportunity costs)?
- Might the provider or their family have trouble integrating with the broader community (e.g., is the community welcoming)?

Internal capacity and context

- Will you need to source, install and/or enable any new technologies?
  - Do you have the infrastructure, including personnel, equipment and processes, to support these new technologies?
- How will you manage maintenance and wear and tear for specialized equipment and resources?
- Does the organization’s leadership support the service change?
  - What are the implications of any social, economic or political influence over stakeholders?
- What existing organizational processes will the proposed service change impact?

Funding and payment models, costs

- What approach will you use for tendering, funding and delivering the service (e.g., request for proposals versus direct award; cost-sharing with foundations, municipalities or local community groups; partnerships with private sector)?
- Will the service have a load or impact on the local and global environment, ecosystem and/or communities (e.g., water use, energy use, waste management, reprocessing activities, competition for physical and human resources)?
  - Does the environment and climate support these processes?

Engagement

- Do you need to consider relationships with post-secondary institutions?
  - What role do these institutions play in the contemplated service delivery model?
  - How are they impacted?
- Is there political and/or community support for the initiative?
  - If yes, what are the benefits of this support?
  - If no, what are the implications of not having this support?
- Which unions and/or collective agreements might you need to involve in the proposed service change?
  - Is there anything special you need to consider with respect to these?
- What opportunities are there for partnerships?

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