

THE DEVELOPMENT OF A MULTISTAKEHOLDER FRAMEWORK/INDEX OF RURALITY

*Final Report to Health Canada:
Rural and Remote Health Innovations Initiative*

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1. SUMMARY

To date, much of the research and initiatives developed within Canada to address rural health human resource issues have been regional and profession-specific, and lacking in cohesion at both the national and multiprofessional levels. For these reasons, the Canadian Medical Association (CMA), Canadian Nurses Association (CNA), the Society of Rural Physicians of Canada (SRPC), and the Canadian Pharmacists Association (CPhA) formed a partnership to develop a national healthcare planning tool. The outcome of this collaboration was a national, multistakeholder framework/index of rurality (please see Appendix I) — a tool that could be used for healthcare planning purposes as well as a means for recruiting and retaining health care providers to rural and remote communities. It could also help to improve the health status of rural and remote populations by enabling communities to compare themselves to other communities and to more easily identify barriers to achieving a sustainable healthcare workforce.

The various project activities undertaken to develop the index -- the national survey in particular – also generated other resources that would be very beneficial to government, policy-makers and rural communities. This includes data on rural health care professionals' satisfaction with a broad range of personal and professional issues, as well as community retention predictors based on feedback from rural and remote health care providers.

This project focused primarily on health services as one of the determinants of health within the population health model. Major activities for this project included an international scan on health human resources, a national survey on rural health practice in Canada, and cross-Canada focus groups with citizens living in rural and remote communities.

2. BACKGROUND

The poor health status of rural and remote populations compared with their urban counterparts, as well as the challenges they encounter in accessing health services, have been well researched. Unfortunately, these health inequities are exacerbated by the difficulties that rural and remote communities experience in retaining and recruiting health care providers. The need to address health care workforce issues is therefore a critical component in helping to ameliorate the health status of rural and remote populations.

While living and working in rural or remote communities is very satisfying for many health care professionals, they often face a broad range of challenges. These include breadth of practice, long working hours, geographic isolation, lack of professional back-up, and limited access to specialist services. These factors influence not only the recruitment and retention of healthcare professionals, but also access to and the quality of care received by those who live in rural and remote areas.

3. PROJECT GOALS

The ultimate goal of the collaboration between the CMA, CNA, SRPC and the CPhA was to develop a national, multistakeholder framework/index of rurality — a tool that could be used for healthcare

planning purposes as well as a means for recruiting and retaining health care providers to rural and remote communities. It could also help to improve the health status of rural and remote populations by enabling communities to compare themselves to other communities and to more easily identify barriers to achieving a sustainable healthcare workforce.

The project partners also sought to ensure that this tool reflected input from a variety of health care providers, members of rural and remote communities, and government/district or regional health boards.

4. ACTIVITIES

All of the project components that were outlined in the original project proposal were implemented and are described in the sections that follow. The on-going project involvement of rural and remote communities, as well as rural health care providers and other stakeholders, is also explained here.

4.1 Environmental Scan on Health Human Resources

The objective of this activity was to collect information on, and analyze, health human resources policies, programs and tools within Canada and internationally. This environmental scan was carried out using a questionnaire tool that was sent in four protocols to 61 national and international governments and organizations. The questionnaire included questions on:

- definitions of “rural”, “remote”, “non-urban”, “urban”, “northern”;
- geographic distribution of health care providers;
- research addressing health human resource issues;
- programs and initiatives planned or implemented; and
- personal/family/professional issues affecting healthcare professionals in non-urban areas.

Feedback to the scan and a review of the materials provided by respondents revealed that there are no universally-accepted definitions or methodologies for determining whether a community is “rural” or “remote”, or for determining relative degrees of rurality between communities. In some cases, such as in Canada, varied approaches occur among jurisdictions.

There is agreement, however, that the recruitment and retention of health care professionals continues to be a global problem. A number of recruitment and retention initiatives have been put into action. Some effort has been made to move beyond financial incentives and to devise plans that address the personal as well as professional lives of health care professionals; however, many of these initiatives tend to focus on physicians only.

Little is known about the conditions of rural nursing practice including work satisfaction, educational needs and retention factors. While Canada has a sizable rural and northern population, the majority of rural nursing research and literature comes from the United States and Australia. For a nurse to practice in a rural setting in any country, however, wide clinical experience and flexibility to care for a variety of patients are key. In Canada, attempts have been made to encourage careers in rural nursing through

mentoring and preceptoring strategies, as well as through assistance with nursing education on the understanding that they will return to the rural community upon graduation.

While it is suspected that rural and remote communities also face challenges with the recruitment and retention of pharmacist, this phenomenon is, unfortunately, not well documented.

Some initiatives to encourage rural practice are aimed specifically at students. There is some evidence that students from rural backgrounds are more likely to go into rural practice; therefore, Australian and Canadian programs have been developed to attract rural high school students into medicine. Similarly, as early exposure to rural practice during undergraduate education is also believed to help develop an interest in rural practice, many medical and nursing schools now provide such opportunities to their students. Scholarship and bursary programs are also common, whereby medical and nursing students are offered financial support in exchange for the students agreeing to practice in pre-designated under-served areas for a period of time after graduation.

Healthcare planning, and the factors that define a community as rural, are complex issues. Feedback to the scan and the supporting literature reinforce the need for a framework/index of rurality to include some measure of the unique characteristics and factors that make an area rural from a healthcare perspective. For example, distance to referral centres, high levels of on-call, and the absence of equipment and services should all be included in determining relative “ruralness”. Recognizing the professional and personal issues that influence the recruitment and retention of healthcare professionals, and understanding that the concept of rural is not as simple as measuring population density, are critical when creating programs or policies to deal with these issues.

A full report on feedback from the scan is attached as Appendix II.

4.2 National Survey on Rural Health Practice in Canada, 2001

4.2.1 Introduction

The national survey of nurses, physicians, and pharmacists was carried out in the fall of 2001. The primary objective of the survey was to seek input to the factors that best define a community as rural or remote from a healthcare perspective. This feedback was used to develop the multistakeholder framework/index.

The survey instrument was designed by the Project Steering Committee, with input from a range of rural health care providers. The survey also sought to:

- determine, from the perspective of health care professionals in rural or remote communities, the most important characteristics in defining rural practice;
- assess the full range and characteristics of health care communities in rural Canada;
- and determine nurses', pharmacists' and physicians' satisfaction with their personal and professional lives in rural and remote communities.

A copy of Survey on Rural Health Practice in Canada, 2001 is attached as Appendix III.

4.2.2 Survey Methodology

A modified Dillman approach was used to conduct the 8-page survey. The survey was mailed on October 10, 2001 to a valid sample of 1974 physicians, 722 registered nurses, 1024 licensed practical nurses, and 2524 pharmacists working in rural and remote communities across Canada. For sampling purposes, where possible, rural communities were defined as being outside a census metropolitan area or a census agglomeration. If this information was not available, then rural communities were determined using the Canada Post proxy of the second digit of the postal code equaling zero. The mailing lists were obtained through the project's partner organizations as well as other organizations.

The Ordre des infirmières et infirmiers auxiliaires du Québec did not participate and thus results for nurses do not reflect the opinions and situations in the province of Quebec. As well, it was not possible to include New Brunswick pharmacists or registered nurses in the sample.

The anonymous survey was followed up 2 weeks after the initial mailing with a reminder card sent to the full sample. Six weeks after the initial mailing a second reminder was sent, again to the full sample, along with a second copy of the survey.

NCS Canada Limited was retained to perform the key punching of responses, however, the results were compiled and analyzed at the CMA — the project secretariat.

Non-demographic questions within the survey covered topic areas such as: satisfaction with rural practice; types of services provided in the community; success in recruitment and retention; defining a rural/remote community; and telehealth.

The question on defining a rural/remote community was a key component in the development of the index of rurality. Survey respondents were asked to select 5 of 16 predetermined factors that were most important in defining a community as rural/remote *from a healthcare perspective*. They were not, however, asked to rank the 5 factors. Respondents were also invited to suggest additional factors not included in the list.

4.2.3 Survey Results and Interpretation

The survey yielded a total response rate of 47% (n=2962). The response rates by profession were 45% for physicians (n= 887); 72% for registered nurses and nurse practitioners (n= 521); 52% for licensed practical nurses/registered practical nurses and nurse assistants (n= 535); and 40% for pharmacists (n= 1019).

With the exception of under-representation among Quebec physicians, the respondent group was very representative of both the sample and the universe in terms of age, sex, region and FP/specialist split (in the case of physicians).

4.2.3.1 Demographic Profile

The average age of workers in each professional group was very similar, but physicians were the oldest at 48 years. The average age of nurses was 46 and for pharmacists it was 45. Physicians were predominantly male (71%), nurses almost exclusively female (96%), and pharmacists the most balanced with 55% male and 45% female.

Rural pharmacists were most likely to live in communities of less than 2000 people (38%) compared with nurses (29%) or physicians (21%). Over two thirds (66.9%) of all health care professionals polled live at least 100 kilometres from a centre of 100,000 or more with little difference among the provider categories.

Almost all (96%) rural nurses and pharmacists graduated from a Canadian program; this number was much less (74%) for physicians.

4.2.3.2 Selected Findings

While responses to section 4 of the survey – “What Defines A Community as Rural/Remote?” – was the foundation for the development of the framework/index, feedback to other parts of the national survey also yielded important and useful information on a variety of other, relevant topics. These selected findings are presented within Appendix IV of this report and cover the following issues:

- personal and professional satisfaction with rural practice;
- healthcare services provided in rural communities;
- telehealth; and
- retention predictors for health care professionals in rural/remote communities.

A more detailed analysis of feedback to the “Defining Rural/Remote” section of the survey, including factor ranking by professional group, is also included.

4.3 Development of the Framework/Index

4.3.1 Introduction

The multistakeholder framework/index of rurality expanded on the *national framework of rurality* previously developed by the CMA in 1999 with funding from Health Canada (please see Appendix V).

The original, national framework was based on the perspective of polled rural physicians as to what factors most define a community as rural. The scope of the framework, however, was limited to the medical profession. It was believed that the framework would be strengthened if the perspective of other rural health care providers could be incorporated.

The 2001 CMA, CNA, SRPC, and CPhA study reflects input from members of the community, health care planners, physicians, nurses and other healthcare providers such as pharmacists. This input was sought via a national survey and through a series of focus groups in rural communities across the country as well as consultation with representatives from a variety of professional organizations and district or regional health boards. The usefulness of the framework/index as a health human resource planning tool was assessed with the assistance of a variety of health professionals and community leaders.

4.3.2 Methodology

The national, multistakeholder framework/index of rurality was developed on the basis of responses to one particular question in the 2001 rural survey. More specifically, survey respondents – who represented a range of professional groups – were asked to select 5 factors (from a total of 16) that they believed were most important in defining a community as rural/remote from a healthcare perspective. The number of mentions for each of these 16 factors was then compiled by professional group. Next, each factor was assigned a weight based on the number of mentions it received.

4.3.3 Overall Ranking of Factors in Defining a Community as Rural/Remote from a Healthcare Perspective

The analysis of the 16 factors that may define a community as rural/remote from a health care perspective is based on the relative number of mentions by each professional group. Each respondent was asked to select 5 factors, in no particular order. Any reference to placement or ranking in the analysis is based strictly on the aggregate number of mentions. Table 1 below outlines the differences and similarities in the ranking of the factors between the professional groups.

The number of responses from nurse practitioners and advanced practice nurses was too small to analyze separately. Responses from these practitioners have been included with those of registered nurses. The term “licensed practical nurses” also denotes registered practical nurses (as this is what they are titled in Ontario), but also includes nurse assistants for the purposes of this report.

All practitioner groups chose “long distance to a secondary referral centre” often enough among their 5 factors to have it place either first or second. “Barriers (geography/weather/roads) to timely access to healthcare services” also placed among the top 5 as did “inability to provide services such as obstetrics, anesthesia and surgery.”

Both the MD and RN list included “long distance to tertiary referral centre” within the 5 most frequently mentioned factors. Only in the physician list did “high on-call responsibilities” place within the top 5. The other professional groups considered “insufficient health care providers” as a more important factor than did physicians and included it often enough to fall in the top 5. In fact, pharmacists mentioned it more often than any other factor. LPNs and pharmacists placed “difficulty in obtaining locums” in the 5th position.

Table 1: Factor Ranks by Professional Group

Factor	All n=2993	MDs N=887	RNs n=500	LPNs n=535	Pharms n=1019
	Factor rank (1=most mentions)				
Long distance to a secondary referral centre	1	1	2	1	2
Barriers (geography/weather/roads)	2	2	1	4	3
Insufficient health care providers	3	6	4	3	1
Inability to provide obst, gen surg, anesthesia, etc.	4	5	5	2	4
Long distance to a tertiary referral centre	5	3	3	7	9
High level of on-call responsibilities	6	4	7	9	7
Difficulty in obtaining locums	7	9	8	5	5
Lack of equipment such as x-rays, lab	8	7	11	10	6
Limited/non-existent public transportation	9	10	6	8	8
Sparsely populated catchment area	10	8	10	15	10
High turnover rate of healthcare providers	11	11	14	10	11
Limited or restricted ambulance service	12	12	9	14	12
Lack of capacity to utilize equipment	13	14	13	6	13
Insufficient continuous professional development	14	13	11	12	14
Lack of access to telecommunication	15	15	15	13	15
Limited opportunity for sabbaticals	16	15	16	16	16

Note: Rankings will repeat when number of mentions are identical.

There was strong similarity between physicians and registered nurses in terms of what factors were mentioned most often as defining a rural community. Of the top 5, the only difference was the placement of “high on-call responsibilities” – fourth for physicians, but seventh for nurses. Proportionately, there were twice as many mentions of this factor among physicians (11% of all mentions) as there were among the registered nurses (4%). The other non-physician groups, especially licensed practical nurses, did not consider on-call responsibilities as strong a factor in defining a community as rural/remote as did the physicians. Like RNs, pharmacists placed it seventh while it placed ninth on the LPN list.

The factors chosen by LPNs appeared to align more closely with those chosen by pharmacists than those chosen by RNs, although this is not based on any scientific analysis. Both LPNs and pharmacists considered “difficulty in obtaining a locum” to be a strong defining factor with sufficient mentions to place it fifth, whereas for physicians and nurses it placed ninth and eighth, respectively. These 2 groups did not see “distance to a tertiary centre” as particularly relevant in defining a community as rural/remote; it ranked seventh and ninth compared with physicians and nurses where, in both cases, it placed third.

There was strong similarity among all the professional groups as to the 10 most frequently mentioned factors (although not identical rankings). One exception was RNs, where “lack of equipment” did not make the top 10 (it placed eleventh) although “limited/restricted ambulance service” did. The only other exception occurred among LPNs where “sparsely populated catchment area” rated only fifteenth, but “lack of capacity to utilize equipment” placed sixth.

Please refer to Appendix IV for detailed analyses by individual professional group, and also see Appendix IV, Table 2, for the ranking and analysis of the framework/index factors by *region*.

4.3.4 Calculating the Factor Weighting System

The survey question on defining rural/remote listed 16 factors and asked respondents to select only the top 5 they believed were most important in defining a community as rural/remote. The 10 factors that received the most mentions received close to 80% of all mentions, regardless of the professional group. For this reason, only these 10 factors were used in the framework/index.

Factor weightings were assigned separately for each professional group. Each of the 10 factors was assigned these weights based on the number of mentions it received relative to the total number of mentions for all ten factors combined. The factor “long distance to secondary referral centre”, for example, received 557 mentions from physicians. This represented 15.4% of all the physician mentions of the top 10 factors. The percent distributions were converted to a weight by dividing by 100; therefore, the physician weight for this factor was 0.15. The combined weights for all 10 factors sum to 1.0. Please refer to the tables below.

Table 2: Factor Ranks of Top Ten Factors (based on all respondents combined)

Factor	All	MDs	RNs	LPNs	Pharm
	Number of top 10 mentions				
Long distance to a secondary referral centre	1713	557	273	329	554
Barriers (geography/weather/roads)	1568	491	330	254	493
Insufficient health care providers	1396	302	241	268	585
Inability to provide obst, gen surg, anesthesia, etc.	1264	336	216	275	437
Long distance to a tertiary referral centre	1107	463	248	148	248
High level of on-call responsibilities	1072	449	174	143	306
Difficulty in obtaining locums	971	265	115	162	429
Lack of equipment such as x-rays, lab	846	296	111	125	314
Limited/non-existent public transportation	766	178	176	146	266
Sparsely populated catchment area	716	291	112	67	246
Total	11419	3628	1996	1917	3878

Table 3: Percent Distribution for Top Ten Factors

Factor	MDs	RNs	LPNs	Pharm
	% of all top 10 mentions			
Long distance to a secondary referral centre	15.4	13.7	17.2	14.3
Barriers (geography/weather/roads)	13.5	16.5	13.2	12.7
Insufficient health care providers	8.3	12.1	14.0	15.1
Inability to provide obst, gen surg, anesthesia, etc.	9.3	10.8	14.3	11.3
Long distance to a tertiary referral centre	12.8	12.4	7.7	6.4
High level of on-call responsibilities	12.4	8.7	7.5	7.9
Difficulty in obtaining locums	7.3	5.8	8.5	11.1
Lack of equipment such as x-rays, lab	8.2	5.6	6.5	8.1
Limited/non-existent public transportation	4.9	8.8	7.6	6.9
Sparsely populated catchment area	8.0	5.6	3.5	6.3
Total	100.0	100.0	100.0	100.0

Table 4: Weightings for Top Ten Factors

Factor	MDs	RNs	LPNs	Pharm
	weight for top 10 mentions			
Long distance to a secondary referral centre	0.15	0.14	0.17	0.14
Barriers (geography/weather/roads)	0.14	0.17	0.13	0.13
Insufficient health care providers	0.08	0.12	0.14	0.15
Inability to provide obst, gen surg, anesthesia, etc.	0.09	0.11	0.14	0.11
Long distance to a tertiary referral centre	0.13	0.12	0.08	0.06
High level of on-call responsibilities	0.12	0.09	0.08	0.08
Difficulty in obtaining locums	0.07	0.06	0.08	0.11
Lack of equipment such as x-rays, lab	0.08	0.06	0.06	0.08
Limited/non-existent public transportation	0.05	0.09	0.08	0.07
Sparsely populated catchment area	0.08	0.06	0.03	0.06
Total	1.00	1.00	1.00	1.00

4.3.5 Factor Measurement

To apply the framework/index at the community level, each factor must first be measured. While some factors lend themselves easily to a quantitative measurement (e.g., distance to secondary referral centre) others are more challenging. As such, some factors were assigned a measurement according to a qualitative based system (e.g., limited or no public transportation).

Each factor can have a score ranging from 1 to 5. The following tables indicate the score definitions for each factor. Two possible methods of scoring were devised for Factor 9 (transportation). These methods were tested in communities and with district or regional health boards (see sections 4.6 and 4.7). The option that most respondents indicated as their preference is used in the final framework/index and shown here. Similarly, two methods of scoring Factor 6 (on-call responsibilities) were tested with district or regional health boards and the preferred method, shown here, was incorporated into the framework/index. Based on suggestions received at the Multistakeholder Meeting (see section 4.5), some of the terminology within the framework/index was modified slightly to remove negative or deficit phrasing.

- **FACTOR 1:** Distance to a secondary referral centre.

Distance category	Distance score
• Fewer than 20 km	1
• 20 to 49 kms	2
• 50 to 99 kms	3
• 100 to 199 kms	4
• 200 or more kms	5

- **FACTOR 2:** Barriers (geography/weather/roads) to timely access to healthcare services.

Category of barrier	Barrier score
• Road access – closed fewer than 5 days per year	1
• Roads access – closed 5 or more days per year	2
• Access by train and air only – somewhat weather dependent, limited schedule	3
• Access by air and water only – weather dependent	4
• Access by air only – weather dependent	5

- **FACTOR 3:** Number of health care providers [full-time equivalents]

Physician FTE/pop category		Nurse FTE/pop category		Pharmacist FTE/pop category	
# per 1000 pop	Score	# per 1000 pop	Score	# per 1000 pop	Score
>2	1	>8.9	1	>1	1
1.6 – 2.0	2	6.0 – 8.9	2	0.8 – 1.0	2
1.1 – 1.5	3	4.5 – 5.9	3	0.5 – 0.7	3
0.6 – 1.0	4	3.0 – 4.4	4	0.1 – 0.4	4
0.0 – 0.5	5	<3	5	0	5

FACTOR 4: Ability to provide services such as obstetrics, general surgery and anesthesia.

Category of service provision	Service score
<ul style="list-style-type: none"> General surgery, anesthesiology, and specialized obstetrical services always available in town 	1
<ul style="list-style-type: none"> General surgery, anesthesiology, and specialized obstetrical services available most of the time in town including normal delivery/childbirth 	2
<ul style="list-style-type: none"> General surgery, anesthesiology, and specialized obstetrical services available occasionally in town, normal delivery/childbirth 	3
<ul style="list-style-type: none"> No general anesthesia, only normal delivery/childbirth available in town 	4
<ul style="list-style-type: none"> No general anesthesia, no healthcare provider available for deliveries/childbirths 	5

Note: "Normal delivery/childbirth" could be by an obstetrician, family practitioner or midwife. "Specialized obstetrical services" could include care for high risk pregnancies, Caesarian sections etc.

- FACTOR 5:** Distance to tertiary referral centre

Distance category	Distance score
<ul style="list-style-type: none"> Fewer than 20 km 	1
<ul style="list-style-type: none"> 20 to 49 kms 	2
<ul style="list-style-type: none"> 50 to 99 kms 	3
<ul style="list-style-type: none"> 100 to 199 kms 	4
<ul style="list-style-type: none"> 200 or more kms 	5

- FACTOR 6:** Level of on-call responsibilities [of physicians].

On-call category	On-call score
<ul style="list-style-type: none"> Fewer than or equal to 1 in 6 days (120 hrs/month) 	1
<ul style="list-style-type: none"> 1 in 5 days (144 hrs/month) 	2
<ul style="list-style-type: none"> 1 in 4 days (180 hrs/month) 	3
<ul style="list-style-type: none"> 1 in 3 days (240 hrs/month) 	4
<ul style="list-style-type: none"> More than 1 in 3 days (more than 240 hrs/month) 	5

- **FACTOR 7:** Difficulty in obtaining locums (temporary or casual professional staff)

Difficulty in obtaining locums	Locum score
• Never difficult	1
• Seldom difficult	2
• Sometimes difficult	3
• Usually difficult	4
• Always difficult	5

- **FACTOR 8:** Availability of equipment such as x-rays and lab services

Rating of equipment	Equipment score
• Full suite of radiological and lab services in town, 24 hrs/day	1
• Full suite of radiological and lab services in town, limited hours	2
• Most radiological and lab services available in town, limited hours	3
• Limited x-ray (chest, abdominal, bone), lab (routine blood) services in town	4
• No x-ray or laboratory services in town	5

- **FACTOR 9:** Availability of public transportation to healthcare services.

Availability of public transportation	Transportation score
• Regular bus service within & between communities, taxi	1
• Regular bus service between communities, hospital shuttle, taxi	2
• Limited bus service between communities, hospital shuttle, taxi	3
• Taxi only	4
• No public transportation or taxi	5

- **FACTOR 10:** Size of catchment area

Catchment Area	Catchment score
• < 20 km radius	1
• 20 – 49 km radius	2
• 50 – 99 km radius	3
• 100 – 199 km radius	4
• 200 or more km radius	5

4.3.6 Applying the Weights to the Factor Measurements

For each professional group, the weight for each factor is multiplied by the factor score (1 to 5). Next, the sum of all ten weighted scores is recorded. This results in a rurality index for each professional group for a particular community.

4.3.7 Final Multistakeholder Framework/Index of Rurality

Appendix I comprises the complete index of rurality and full instructions on how to complete the framework/index at the community level.

4.3.8 Interpretation of the Rurality Index

The framework/index of rurality is not intended to determine if a community is rural but rather to determine how rural/remote it is compared to another community, and to help communities more easily identify barriers to achieving a sustainable healthcare workforce.

The degree to which the community score for a factor affects the indices depends on the weighting of the factor for each professional group. Pharmacists, for example, mentioned “difficulty in obtaining locums” much more frequently than the other groups when selecting factors that define a rural community. If the particular community has little or no difficulty finding locums, then it will receive a low factor score and the weight difference will have a marginal effect on the index. If, on the other hand, the community scores more highly on this factor, the impact to the index will be greater, and the difference between the index for pharmacists and the indices for other professional groups may also be greater.

4.4 Community Focus Groups

4.4.1 Introduction

The next stage of the project was to determine the usefulness of the multistakeholder framework/index of rurality and to seek input on current approaches to recruitment and retention, based on input from communities, a variety of healthcare professionals and non-healthcare professionals, health care planners, and centralized health care services (e.g. ambulance services). The broader context of rural community economic development issues and how that impacts the recruitment of all kinds of professionals was also addressed.

4.4.2 Methodology

An interview protocol was developed by the Steering Committee, and input from the Ipsos-Reid Corporation was sought. The Ipsos-Reid Corporation was retained to coordinate and moderate the series of focus groups in the following 8 rural and remote locations across Canada:

- Shawville, Québec (pilot)
- O’Leary, Prince Edward Island
- Yellowknife, Northwest Territories
- Elkford, British Columbia

- Fort Qu'Appelle, Saskatchewan
- Lamèque, New Brunswick
- Blanc-Sablon, Québec (2 focus groups were carried out here; one in French, one in English.)
- Moose Factory, Ontario

The population for the chosen locations was between 800 and 3000, with the exception of Yellowknife where the population is greater than 17 000. Each of the following additional criteria was satisfied by at least one of the locations:

- a remote, but not rural town;
- a French language community;
- an aboriginal community;
- a range of geographical considerations (west to east across the country); and
- a community considered to be successful in the recruitment and retention of health care professionals.

4.4.3 Focus Group Feedback

A report on focus group feedback was prepared by the Ipsos-Reid Corporation and is included as Appendix VI. Table 5 below lists the 10 factors that define a community as rural/remote from a healthcare perspective, as identified by survey respondents. It also shows the number of focus group participants who agreed or disagreed with these factors as they relate to their own community versus other rural/remote communities in general.

Most focus group participants who completed this exercise agreed that the factors applied both to their own communities, as well as to other rural/remote communities. The only major exception was “lack of equipment such as x-rays and lab services”. While participants agreed that this factor is a concern in rural/remote communities in general, it did not seem to be an issue in the communities where the focus groups were carried out.

Focus group participants were also asked to list additional characteristics that they felt might best define communities as rural/remote. For the most part, these characteristics fell into the following categories:

- distance from a major centre;
- lack of facilities and resources;
- cultural issues; and
- professional education/training and advancement.

A complete list of verbatim comments on this question is included within Appendix VI.

Table 5: Top Ten Factors: Agreement/Disagreement by Focus Group Participants

		Describes Rural Communities		Describes My Community	
		Agree	Disagree	Agree	Disagree
	Factors Defining Rural/Remote Communities from a Healthcare Perspective				
A.	Long distance to secondary referral center	60	7	52	13
B.	Barriers (geography/weather/roads) to timely access to healthcare	55	11	53	15
C.	Long distance to tertiary referral (definition on attached sheet)	58	9	56	8
D.	High level of on-call responsibilities	53	7	54	6
E.	Inability to provide services such as obstetrics, general surgery and anaesthesia	62	5	52	10
F.	Insufficient healthcare providers	47	13	46	14
G.	Lack of equipment such as x-rays and lab services	45	17	19	43
H.	Sparsely populated catchment area (definition on attached sheet)	54	12	48	14
I.	Difficulty in obtaining locums (definition on attached sheet)	55	7	49	9
J.	Limited/non-existent public transportation	57	6	47	16

4.5 Meeting with Stakeholders

Twenty guests representing a variety of stakeholder groups joined the project Steering Committee for a one-day meeting to discuss the survey and focus group results as well as the framework/index itself. The resulting dialogue assisted in refining the framework/index and guiding the project towards its next steps. Highlights of the discussion at this one-day meeting are attached as Appendix VII.

4.6 Testing the Framework/Index in Rural Communities

4.6.1 Introduction

The next stage of the project was to test the multistakeholder framework/index of rurality through its application in a number of rural or remote communities across the country. Specifically, the objectives of this exercise were:

- to assess the feasibility of quantifying the factors;
- to determine whether the process and instructions for completing the index forms were user-friendly;

- to assess the perceived usefulness of the index ratings;
- to seek input to options for scoring some of the factors; and
- to seek input to the components for a community assessment workbook.

4.6.2 Methodology

Either a rural/remote community physician, nurse, pharmacist, hospital administrator/board member, or community leader was selected to test the framework/index. An effort was made to ensure that the framework/index would be tested by equal representation among each professional group.

The 12 rural/remote communities listed below were chosen as test sites, using similar selection criteria as that used for the focus groups, such as cultural (Aboriginal, French), geography, and remoteness. Another criterion was choosing those provinces that were not visited during the community focus groups.

- | | |
|---------------------------------|--------------------------------------|
| • Valleyview, Alberta | • Pointe-Lebel, Québec* |
| • Fort Qu'Appelle, Saskatchewan | • Parrsboro, Nova Scotia |
| • Lac Du Bonnet, Manitoba | • Souris, Prince Edward Island |
| • Moose Factory, Ontario | • Nain, Labrador |
| • Red Lake, Ontario | • Ferryland, Newfoundland |
| • Blanc-Sablon, Québec* | • Yellowknife, Northwest Territories |

** Note: Participants from these communities did not return the framework/index evaluation form.*

The draft framework/index and an evaluation form were translated and disseminated via facsimile or email to the selected individuals in the rural test communities. This process was both efficient and cost-effective.

The evaluation form contained questions regarding the user-friendliness of the framework/index, its perceived usefulness, and what other tools could be included in a hypothetical workbook along with the framework/index. Two different methods of scoring factor 9 (Transportation) were presented, and respondents were asked to indicate their preferred option.

4.6.3 Results

All respondents agreed that the instructions for completing the framework/index were easy to understand, and most also agreed that the framework/index score and tally forms were also unproblematic. Some minor issues that were raised regarding the completion of the forms were addressed in the subsequent modification of the framework/index.

Interestingly, while most respondents indicated that the tool would not be useful for retention and recruitment of health care professionals, they did believe it would be of value for health human resources planning. Almost all felt that the results of applying the framework/index would be helpful if compared

to a benchmark, and most believed it would be useful to compare the scores to other communities. Many respondents also indicated that comparing the scores of their own community at different points in time could also be useful.

Participants were also asked what kind of information, in addition to the framework/index, they would find valuable to include in a hypothetical community assessment workbook. The majority of respondents felt that suggested strategies for dealing with the challenges in recruiting and retaining healthcare professionals in rural/remote areas, as well as statistical data on professional and personal satisfaction levels of rural healthcare professionals, would be most beneficial.

For details on the responses and comments of the evaluation participants, please see Appendix VIII.

4.7 Testing the Framework/Index with District or Regional Health Boards

4.7.1 Introduction

Respondents to the first phase of testing with communities indicated that the framework/index would be of value for health human resources planning; as such, a second phase of testing was added to our original work plan. This stage involved testing the multistakeholder framework/index of rurality through its application by various district or regional health boards across Canada.

4.7.2 Methodology

Following permission from the provincial medical associations to approach the district or regional health board in their province, a total of 11 health boards across the country were approached and agreed to participate in the testing phase of this project. Attempts were made to seek input in each province; however, this was not always possible. Following is a list of those district or regional health boards to whom the evaluation forms were sent.

British Columbia

- Vancouver Coastal Health Authority*
- Interior Health Authority*
- Joint Standing Committee on Rural Physicians**

Alberta

- Aspen Regional Health Authority
- Palliser Regional Health Authority

Saskatchewan

- Cypress Regional Health Authority
- Heartland Regional Health Authority*

Manitoba

- Burntwood Regional Health Authority*
- Interlake Regional Health Authority

New Brunswick

- Acadie-Bathurst Health Authority
- South-East Regional Health Authority

Nova Scotia

- Cape Breton District Health Authority
- Colchester East Hants District Health Authority*

Prince Edward Island

- West Prince Health

Newfoundland and Labrador

- Central West Health Corporation*
- Health Labrador Corporation*

**Note: Participants from these District or regional health boards did not return the framework/index evaluation form.*

***Note: The BCMA recommended also testing the framework with this committee, which is comprised of both government and British Columbia Medical Association (BCMA) representation.*

Some minor changes were made to the evaluation form used for the community testing, and the form along with the draft framework/index was disseminated via facsimile or email.

The evaluation form contained questions on topics similar to those outlined in section 4.6.2. In addition, the respondents were asked if they would find a community assessment workbook useful. Two different methods of scoring for both factors 6 (On-call) and 9 (Transportation) were presented, and respondents were asked to indicate their preferred option for both.

4.7.3 Results

As with the community respondents, almost all RHA respondents agreed that the instructions for completing the framework/index were simple to understand, and most also agreed that the framework/index score and tally forms were easy to complete. Minor concerns raised were addressed by the Steering Committee, and modifications were incorporated into the framework/index.

While community respondents indicated that the tool would be useful for health human resources planning (as mentioned in section 4.6.3), the RHA respondents disagreed, indicating that it would be better used as a tool to help guide discussions around recruitment and retention. Most participants from district or regional health boards believed that the framework/index scores would be helpful when compared to other communities and benchmarks.

When asked if they felt a community workbook (containing the framework/index, ways to use it, and suggested strategies for dealing with challenges in recruiting and retaining healthcare professionals in rural/remote areas) would be useful, most respondents agreed. The majority of respondents also

believed that “suggested strategies for dealing with the challenges in recruiting and retaining healthcare professionals in rural/remote areas” and “statistical data on professional and person satisfaction levels of rural healthcare professionals” should be included in such a workbook, as well as “potential ways to use the framework”.

For additional details on responses from this test group, please see Appendix IX.

5. Participation of the Population Group

The primary population targets for this project were rural and remote communities and healthcare professionals.

All components of this project, i.e., planning, implementation, evaluation and dissemination, included a rural community perspective. This included input from either rural healthcare professionals (nurses, physicians, pharmacists), rural community citizens, or both. Please refer to the project activity descriptions for more details.

6. Partnerships and Intersectoral Collaboration

The Steering Committee for this project comprised the following key stakeholders in rural health and health human resources: the CMA, CNA, SRPC, CPhA and the federal government (Health Canada). The shared interests and concerns of these groups made the collaboration a success. In addition, the in-kind contribution of time and other resources from each of these participating organizations was significant.

The project also involved other stakeholders in rural health and health human resources, including members of rural and remote communities, district or regional health boards, and participants at the September 2002 Meeting of Stakeholders (see Appendix VII).

7. Results

This project focussed on health services as one of the determinants of health within the population health model. The major results and accomplishments arising from this project, as well as the experiences and knowledge gained through the application of a population health approach, are described in detail within section “**4. Activities**” of this report. In summary, these included:

- an environmental scan and report on health human resources;
- the development of a multiprofessional framework/index of rurality;
- selected survey results from rural health care professionals (nurses, physicians and pharmacists) on:
 - personal and professional satisfaction factors;
 - availability of, and gaps in, a broad spectrum of health care services in rural and remote communities across Canada;
 - community success in recruiting and retaining health care providers;

- predictors for the retention of health care providers; and
- availability of telehealth.
- rural community input on challenges and approaches to the recruitment and retention of health care professionals and access to health care services;
- broad stakeholder input to the draft framework/index and process issues; and
- grassroots input to the draft framework/index through its evaluation by rural health care professionals, non-healthcare professionals and district or regional health boards.

Resources or materials emanating from the above-noted activities were shared (mostly through hard copy) to a variety of groups for information or input. Please refer to section “4. Activities”, for specifics.

Travel to the rural community focus group sites allowed project Steering Committee members to fully appreciate, through dialogue with rural citizens, the hardships they face in accessing health services. In addition, it was evident that the challenges many communities ensure in recruiting and retaining health care professionals are multi-faceted, and may include a number of inter-related economic, environmental (e.g., pollution – Lameque, New Brunswick) and other factors.

8. EVALUATION

8.1 Description of Activities

To date, much of the research and initiatives developed within Canada to address rural health human resource issues have been regional and profession-specific, and lacking in cohesion at both the national and multiprofessional levels. The goal of this project was to develop a *multistakeholder* framework of rurality that could be used by governments or community planners as a healthcare planning tool as well as a means for recruiting and retaining health care providers in rural and remote communities. It could also help to improve the health status of rural and remote populations by enabling communities to compare themselves to other communities and to more easily identify barriers to achieving a sustainable healthcare workforce. The framework/index was developed with input from rural physicians, nurses, and pharmacists as well as rural communities and other stakeholders, such as district or regional health boards.

Seeking input from various stakeholder groups was initiated at the conceptual stage of the project through the partnership formed between the CMA, CNA and SRPC. Together, these three organizations submitted a proposal to the Rural and Remote Health Innovations Initiative (Health Canada) to develop *the multistakeholder framework/index of rurality*. Representatives from each organization formed the project Steering Committee, which soon expanded to include representation from the CPhA.

Section 4 of this report describes in more detail the various project activities undertaken by the Steering Committee, including:

- an international, environmental scan and report on health human resources planning;
- a multiprofessional survey on rural health practice in Canada;
- the development of the framework/index;
- national, rural community focus groups;
- meeting with rural health stakeholders;
- testing the framework/index in rural communities; and
- testing the framework/index with district or regional health boards.;

Through the implementation and evaluation of these tasks, the multistakeholder framework/index of rurality was developed, refined and finalized – and the project goal achieved. These project activities – the national survey in particular – also generated other resources that would be very beneficial to government, policy-makers and rural communities. This includes data on rural health care professionals’ satisfaction with a broad range of personal and professional issues, as well as community retention predictors based on feedback from rural and remote health care providers.

8.2 Reasons for Success

The project goals and objectives were both realistic and relevant, and were carried out in accordance with a project timetable and budget. The availability of a fully-funded, full-time project coordinator also contributed to the success of the project.

The only main challenge among the project activities was determining how best to incorporate input from a broad range of rural health-related organizations. Ultimately, the Steering Committee determined that this goal could best be achieved through a joint meeting of all of these groups; as such, Health Canada approval was sought in this regard. The meeting was eventually convened on September 13, 2002. At this time, the Committee shared the draft framework along with rural community focus group feedback and an analysis of responses to the national rural health care provider survey. Feedback from meeting participants was used to enhance the framework/index.

Another factor that influenced the success of this project was the national rural community focus groups. These forums engaged both health care professionals and community members and provided an excellent vehicle for soliciting insights and opinions. They also served as a useful mechanism for enhancing community knowledge of and support for the project. This was also the case with the testing phase of the framework/index.

Finally, the project Steering Committee worked very well together as a group and this is probably attributable to a number of factors. While the Committee comprised representation from several different professional groups, the shared concerns and issues among all created a sense of unity and purpose. Secondly, the small size of the Committee (8 persons) helped to focus discussions and decisions, while still allowing sufficient opportunity for input.

8.3 Impact

The project partners believe that this framework/index will ultimately contribute to improving access to health care by Canadians in rural and remote areas. In addition to assisting with healthcare planning and the recruitment and retention of healthcare professionals in rural and remote areas, this tool can also be used to help facilitate community self-assessment from a healthcare perspective and identify barriers or issues for change, or it could even help identify positive aspects of the community. The index could also be used as the basis for community discussions on health care issues and to assist in the development of healthcare strategies.

The framework/index has the potential to be linked with other health human resources tools or strategies. In addition, implementation of the recommendations outlined in this final report could generate other programs, initiatives or tools, such as a web site, benchmarks, and a community assessment workbook.

While the framework/index was developed at the national level, it was formed on the basis of broad rural healthcare provider and stakeholder input at the community level. As such, the tool is portable across all rural Canadian communities.

It is important to note that feedback to the national survey tool used to develop the index also generated other resources that would be very beneficial to government, policy-makers and rural communities. This includes data on rural health care professionals' satisfaction with a broad range of personal and professional issues, as well as community retention predictors based on feedback from rural and remote health care providers.

8.4 Future of This and Other Projects

While the multistakeholder framework/index of rurality can help communities identify areas for improvement, or even areas of strength, it could also be useful as a tool for comparing communities or determining a community's status relative to an established, national benchmark. The tool could also be used for healthcare planning purposes as well as a means for recruiting and retaining healthcare providers to rural and remote communities. It could also help to improve the health status of rural and remote populations by enabling communities to compare themselves to other communities and to more easily identify barriers to achieving a sustainable healthcare workforce.

As noted in the preceding section, a project could be developed to establish a web-based version of the framework/index as part of a rural community workbook. This workbook could also include suggested strategies for dealing with challenges in the recruitment and retention of health care professionals and data on healthcare providers' professional and personal satisfaction with rural life. The on-line availability of this information would make these resources easily and broadly accessible. In addition, the framework/index itself would be more user-friendly because calculations and the analysis of results could be done instantaneously. Additional resources and updated tools and information could be regularly added to the web site, which could also serve as a database of information on Canada's rural communities.

There are a number of potential other research projects that could also be developed, subject once again to the availability of sufficient financial and human resources. National surveys of health care providers in Aboriginal and in urban communities could be carried out to assess a range of provider and health care services issues. Results from these surveys could be compared with feedback from the *Rural Practice in Canada, 2001* survey. Similarly, a comparative analysis of survey feedback from providers in both rural and remote communities could be undertaken.

With regard to cost-effectiveness in carrying out the activities for the *Multistakeholder Framework of Rurality* project, this was an undercurrent of all activities. As a result, the project partners boast an excess of approximately \$30 000 in unspent funds. Some of the ways in which project costs were minimized are as follows.

- *Desktop publishing of the national survey* – Project staff designed and finalized the survey in-house on Microsoft Word at no billable cost. This resulted in a savings of at least \$1 795, which had originally been budgeted and estimated for this task.
- *Travel to focus group sessions* – As much as possible, the least expensive flights were booked and focus group sessions in similar parts of the country were scheduled in succession to avoid multiple round-trip costs. In addition, the number of project Steering Committee members travelling to the sessions was minimal and ranged between 1-2 persons.
- *Testing the framework/index* – The testing of the framework/index with both rural health care professionals and district or regional health boards was accomplished via facsimile, thereby eliminating the need to incur travel costs for on-site interviews.
- *Accommodation* – Where possible, the least costly accommodation was booked in accordance with the Health Canada Policy Manual.
- *In-kind contributions* – With the exception of the Project Coordinator role that was funded by Health Canada, Steering Committee members provided a significant amount of in-kind contributions of time and other.

8.5 Use of Evaluation Results

The piloting of each of the project activities enabled the Steering Committee to make refinements prior to implementation. Additionally, an evaluation phase following each activity, and the testing of the framework/index by a range of stakeholders, assisted in modifying and refining project outcomes.

Evaluation results, survey and project findings from the multistakeholder framework/index of rurality initiative have the potential to expand and develop further into future projects, subject to the availability of sufficient resources. These potential projects are described in section 8.4, “Future of This and Other Projects” and include the establishment of a web-based program, more detailed analysis of survey findings, and complementary initiatives in partnership with other organizations and rural community research findings.

9. RECOMMENDATIONS

Based on its experience with the multistakeholder framework/index of rurality project, members of the Steering Committee believe that the following initiatives would be beneficial next steps, subject to the availability of sufficient resources (financial and human). The Committee also underscores the need to ensure that stakeholder input, including both government and non-government organizations and community groups, are included.

The Steering Committee recommends:

1. That a meeting of those groups that have developed rural community frameworks/indices be convened to: discuss the effectiveness of these tools, consider possible linkages, and determine how these frameworks/indices could calibrate provider funding programs. Representation from government and key stakeholder groups such as the Canadian Federation of Municipalities should be included at this meeting.
2. That the effectiveness of health care provider incentive programs offered across the country be evaluated and results communicated to stakeholder groups, including governments (provincial and regional) and non-government organizations, professional associations, community groups and others.
3. That, subject to sufficient resources, the multistakeholder framework/index of rurality be expanded to address the social/lifestyle, cultural and economic aspects of rural/remote communities or be leveraged with other tools already developed to address these issues.
4. That a research program be developed to facilitate a comparative analysis of health care provider and service issues between rural and remote communities, rural/remote communities and urban areas, and between rural/remote and Aboriginal communities.
5. That, in response to evaluation feedback, a benchmark for rural and remote community health care delivery standards (health care providers and service availability/access) be developed. This benchmark would optimize the usefulness of the multistakeholder framework of rurality, enhance comparisons between rural/remote areas, and assist in identifying model communities.
6. That a web-based, electronic version of the framework/index be developed along with other community health human resources planning tools. This would simplify framework/index calculations and make the tool broadly accessible.
7. That a research program be developed to seek input from a broad range of rural/remote health care providers on issues such as satisfaction with the professional and personal aspects of rural life, service delivery, and other matters.