

REVIEW ARTICLE

Investigating the health of rural communities: toward framework development

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A B S T R A C T

How healthy are the residents of rural Canada? How healthy are Canada's rural communities? Members of an interdisciplinary research team at the Brandon University Rural Development Institute, Manitoba, Canada, formed a partnership with rural stakeholders in an attempt to strengthen and build capacity in rural communities. One component of this research was the development of a framework to assist residents of rural communities to assess the health and sustainability of their community. Through dialogue with partners and review of the literature, a preliminary framework can be generated. This article formed the first step in the creation of such a framework. The article begins with common term and concept development, extends to a critical analysis of framework literature and culminates with consideration of steps to be taken next in the establishment of a framework and indicators that are both meaningful and useful for rural residents and their communities.

Key words: Canada, determinants of health, theoretical framework, Manitoba, rural community, rurality.

Introduction

Research to describe and measure the health of Canadians and to identify the factors that have an impact on their health is ongoing¹⁻³. However, limited priority has been given to the health of the rural population in Canada. Measuring

population health at the community level is a challenge undertaken by those interested in community development and sustainability⁴; meanwhile, exploring the health of rural communities has come to the fore only recently.



Rural residents, rural community leaders, rural planners, rural health authorities and rural community organizations seek to understand the health and sustainability of their communities (KD Ryan-Nicholls, FE Racher, B Gfellner, R Annis. Unpubl. data, 2000). Governments at local, provincial and national levels strive to support the strengths and build the capacity of rural communities. An interdisciplinary team of researchers, assembled by the Brandon University Rural Development Institute, Manitoba, Canada, shares the concerns of their rural constituents. As a result, a partnership of university researchers, local, provincial and federal community development organizations, regional health administrations and practitioners, and federal government departments has generated a rural health research project. Goals of the project include the development of a framework, consisting of factors identified to influence the health and wellbeing of a rural community, as well as the development of a process and the tools to assist rural communities in assessing their health and sustainability.

Framework development is iterative and involves examination of health determinants, health status, health behaviors, health care utilization and availability of community resources. This article represents one of the first steps in the creation of such a framework. It is the result of an extensive literature review and preliminary discussions between various partners and the research team members. This article begins with defining common terms and concept development, extends to a critical analysis of framework literature, and culminates with brief consideration of steps to be taken next.

Common term and concept development

Before any discussion of the health of rural communities can occur a common understanding of the terms 'rural', 'health', 'community' and 'community health' must be established. Additionally, clarification of the concepts 'health indicator', 'health status', and 'health determinant' is a necessary step toward measuring the health of these communities.

Rural

While some argue that 'rural' has become an irrelevant descriptive term⁵ others make the case that rural can be expressed as 'social representation'⁶. The notion of social representation relates to the sociological framework of rurality which describes 'rural' as based on 'the residents, their values, and their lifestyles, as well as by the geography and density'⁷.

Statistics Canada defines 'census rural' as those that have less than 1000 people living within a population density of less than 400 people per km² and where continuous built-up areas exceed 1 km⁸. According to the Canada census definition, small rural communities with populations of at least 1000 people are considered to be urban. The definition of 'non-metropolitan' areas is the definition of 'rural' most commonly used for research, analysis and policy making in the USA⁹. However, it is recognized that 'metropolitan' areas can include counties with a large amount of 'rural' population and 'non-metropolitan' counties can include a large amount of 'urban' population(FE Racher, AR Vollman. Unpubl. data, 2003). Using the Canadian census or common US definitions, the 'with-in' group variation will certainly exceed the 'between-group' variation¹⁰ and findings will say little about 'rural'⁵.

Accepting that a distinction between rural and urban exists, Humphreys argues that from a health perspective, in order to address and resolve health problems in rural areas the distinction needs to be better understood¹¹. In terms of health care services in rural Ontario, Rourke defines 'isolated communities' as those with 'fewer than 10 000 people, greater than 80 km from a regional center of more than 50 000' (p. 113)¹². For the purpose of our research project, the framework is developed for rural communities with populations less than 5000.

Health

A contemporary view of health is based on the WHO's classic definition of health as 'a state of complete physical,



mental and social wellbeing and not merely the absence of disease or infirmity¹³. More recently, the WHO view of health has been expanded to include an ecological perspective that places health within the context of the individuals' social milieu and physical environment^{4,14}. A comprehensive definition would encompass various levels of effect that impact on health including personal, familial, community, regional, national as well as global factors.

Epp envisaged health as 'a resource which gives people the ability to manage and even to change their surroundings'¹⁵. This view of health recognizes freedom of choice and emphasizes the role of individuals and communities in defining what health means to them' (p. 3). According to Rootman and Raeburn, health is enhanced by sensible living and equitable use of resources to allow people to use their individual and collective initiative to maintain and improve their wellbeing, however they may define it¹⁶.

Our definition of health includes dynamic, action-oriented or changing aspects of health and the more elusive concepts of wellbeing and quality of life are included. Throughout this project 'health', 'wellbeing', 'quality of life', and 'sustainability' are used interchangeably in keeping with our intention to broaden the conceptualization of health, particularly in relation to the community. Subjective and objective perspectives on health are inherent in this conceptualization.

Community

Community has been defined in terms of spatial and non-spatial boundaries. Douglas discusses 'communities of interest' such as labour organizations, political parties, and self-help groups¹⁷. According to Christenson and Robertson a community is best described as (i) people (ii) within a geographically bounded area (iii) involved in social interaction and (iv) with one or more psychological ties with each other and the place they live¹⁸.

It is generally agreed that members of a community associate for a common cause and action. Hence they exert influence

over internal and external forces that condition the quality of their lives¹⁷. Hancock et al. suggested that community could only exist when a group of people, whether defined by geography or affinity, exhibit some awareness of their identity as a group, and where the group is of a size and nature that direct access to decision making is possible⁴. Participation is an inherent quality of a community and without participation there is no community, only potential for it. Although community may be conceptualized as an object (social system), this paper emphasizes community as a subject with its own construction of reality, unique needs, values, and assets.

Community wellness, Community health, Community development

Community wellness: 'Community wellness' or the health of a community refers to the ability of a community to balance between various barriers to health and those things that support health. According to McMurray:

The health of a community involves simultaneous consideration of the needs and goals of the groups inhabiting the community, and examination of the conditions of life that either enhance or impede their health or the health of the community itself. In other words, it is a balance between the aspirations and health-related needs of individuals, groups, and the whole population within the context of their environment. (p. 9)¹⁹

Community health: The term 'community health' reflects evolution in the field of public health and health promotion over the past quarter century. Currently efforts in health promotion are focused toward the social, economic, and environmental conditions that either constrain or facilitate health by focusing on social responsibility for health, re-framing health as an investment in the future, establishing partnerships for health, and empowering the community¹⁹. Community health involves reciprocal relationships between people and their environment with the goal of sustainability.



Community development: ‘Community development’ may be seen as a philosophy, a process, a project or all three at once. As a philosophy community development entails the fundamental democratic belief that people can identify and solve their problems; as a process its supports groups in finding power to effect change and as a project it entails work with community members to bring about community change²⁰. Christenson and Robertson¹⁸ defined community development as: (i) a group of people (ii) in a community (iii) reaching a decision (iv) to initiate a social action process (v) to change their economic, social, cultural or environmental situation.

From the perspective of health promotion, a major goal of community development is to help communities and the people in them to achieve lasting improvement in the quality of their lives¹⁹. These efforts underscore the interconnected principles of equity, access, self-determinism, intersectoral collaboration, and empowerment. For the purposes of our project the terms community wellness, community health and community development are used interchangeably.

Health indicators

Health indicators are measures and operational definitions that represent health concepts. They may be quantitative or qualitative measures that describe the health of a population or community. An indicator may be a single measure or a composite of several indices. A good health indicator is measurable, credible and valid, based on data that are relatively easy and economical to collect, understandable, capable of providing information for either geographically defined rural communities or for clearly defined populations.

Health indicators are used to¹⁴:

- Make spatial and temporal comparisons; to assess health conditions; to provide evidence.
- Support health programs and policies.
- Provide statements of the starting point and the desired end point of interventions.
- Identify levels of and gaps in health and wellbeing of a population or community.

In this project health indicators are developed to reflect categories of the rural community health framework.

Health status

Health status typically involves pathological conditions and health problems that refer to physical health. It includes subjective or self-assessment of one’s health, and objective assessment made by health professionals. Health status may reflect the consequences of health problems as indicated in the categories of disability, use of services, and use of medications²¹. Health status refers to outcome indicator variables that may be associated with some change in structure, process or output of a program or intervention designed to facilitate health and wellbeing.

Community health status requires careful consideration of the aspects of social, environmental and economic health or wellbeing that are relevant to the community. At the community level, and for our purposes health status concepts will include wellbeing, quality of life and sustainability.

Health determinants

Health is determined by individual and collective behaviors in relation to complex interactions between social, economic and environmental factors. These factors referred to, as 'determinants of health' do not exist in isolation from each other, rather the combined influence of the determinants of health influence health status.

In their population health promotion model, Hamilton and Bhatti outlined nine determinants of health²²: (i) income and social status; (ii) social support networks; (iii) education; (iv) working conditions; (v) physical environments; (vi) biology and genetics; (vii) personal health practices and coping skills; (viii) healthy child development; and (ix) health services.

Pitblado et al. used the categories of health determinants, health status, health resources, health behaviours, and health service utilization in their model for organizing a rural health



indicators database¹⁴. Three components health resources, health behaviors and service utilization may be considered sub-components of health determinants. Most determinants of health are discussed in terms of health of the population, an aggregate of the health of individuals. No discussion of health at the community level is apparent.

In their community population health model, Hancock et al. described health determinants in terms of six categories related to community health or wellbeing including: (i) sustainable ecosystems; (ii) environmental viability; (iii) livable built environments; (iv) community conviviality; (v) social equity; and (vi) economic adequacy⁴. They also included two processes of change, education and governance that underlie the conditions for good health. For our purposes, health determinants are the categories of the framework.

Literature on frameworks

A variety of frameworks and health indicators have been developed within the field of population health. In an effort to generate discussion leading to recommendations about a potential framework that can be applied in a rural context at a community level, the present literature review has led to selection of 11 documents including national, and provincial contributions on population health, as well as sources from research on rural population health and the health of communities (Table 1). The review begins with population health frameworks, moves to rural population health and concludes with community health.

The criteria for the development of indicators and currently utilized indicators are well documented in the literature^{4,14,21}. However, much of the current literature focuses on the health of populations. Moreover, populations are aggregates of individuals, but are not necessarily the members of a particular community. In examining rural community health, it is necessary to move from looking at the health of the rural population of Canada to exploring the health of specific rural communities.

Wolf and Bruhn noted that current emphasis in research has been individual behaviors and little attention has been accorded to the possible influences of social forces in family and community²³. Lomas concurred, ‘we seem to spend more time calculating how to apply medical innovations to the individual’s ill health than we spend evaluating or applying the discoveries of social science to the community’s well being’²⁴. Hancock et al. added, ‘We need ways to measure health and quality of life – in its broadest meaning – at the community level and moreover in ways that make sense to the community and not just to policy makers and academics’⁴.

A review of the literature provided no evidence that the current community health frameworks have been or are appropriate to be applied in rural communities. However, critical analysis revealed sufficient grounds for further consideration of documents 6–11 concerning the extent to which each document may be suitable for use with rural communities (Table 1).

Next steps

Using the findings from the literature review of frameworks, the next step is to determine a process by which a framework and indicators can be developed for the rural community health project. Researchers recognize that the literature is only one component, albeit an important one. Another pivotal consideration is the iterative nature of framework development, which necessitates input from rural constituents, stakeholders, and researchers to insure relevance and utility. Since their concepts may influence the findings, careful consideration of available indicators is necessary if one is interested in policy change. Additionally, the concept may require modification for the indicator to remain relevant. It may be advisable therefore, to reevaluate concepts for traditional indicators when developing new models. According to Hancock et al. this underscores the need to involve sectoral partnerships in all phases of the research enterprise to insure that their values, interests, and judgments are reflected in evidence-based decision-making⁴.



Table 1: Population health, rural population health, and community health frameworks

Document	Summary
1. Report on the Health of Canadians ²	This report discusses the measurement of the health of Canadians. Five measurable aspects of health status include: (i) wellbeing; (ii) function; (iii) diseases and health conditions; (iv) deaths; and (v) length of life. Five determinants of health are: (i) living and working conditions; (ii) physical environment; (iii) personal health practices and coping skills; (iv) biology and genetic endowment; and (v) health services. Health status indicators were generated for each measurable aspect using health indicators ²⁵ . Framework and indicators tend to be components of health in the traditional sense. They are measured as individual health and aggregated to determine population health at a national level.
2. Toward a Healthy Future: Second Report On the Health of Canadians ³	This is an update of the first report on the Health of Canadians ² . Health status and health determinants indicators are more comprehensive and complex. Canadians' health status is assessed using indicators of self-rated health, psychological wellbeing, disability/activity limitations, selected diseases and conditions, major causes of death, life expectancy at birth, and potential years of life lost. Six determinants, adapted from the previous report, include: (i) socioeconomic environment; (ii) physical environment; (iii) personal health practices; (iv) biology and genetic endowment; (v) health services; and (vi) healthy child development. Gender, culture, and membership in specific population groups are noted as possible determinants of health. The health of the Canadian population is measured for comparison over time and across countries.
3. Health Indicators ²⁵	This document provides aggregated data for the latest information derived from national surveys and databases, for Canada and its provinces. Indicators include determinants of health, health status, vital statistics, health resources and utilization of health resources for Canada and its provinces. Document contains details on the description of each indicator, its purpose, source, and application. Statistics are usually aggregated on a national and/or provincial basis although some are available at regional and census sub-division levels. These data have tended to be aggregated to describe population health and their use for community health at a more local or community level has not been demonstrated.
4. Community Health Indicators ²¹	Here, health is broken down into a three-tiered structure of health determinants, health status and consequences of health problems. Three categories of health determinants include: (i) environment; (ii) lifestyle, behaviors and risk factors; and (iii) organization of health care. Health status involves subjective and objective components. Although the title refers to 'community health' its application is at a population health level and no intention for application to community, as defined for the purposes of this rural health project, is noted.
5. Provincial Health Indicators ²⁶	This focuses on indicators of health status and determinants of health. Health status indicators include: length of life, deaths, disease and conditions, ability to function and wellbeing. Determinants of health indicators include: healthy child development, personal



	<p>health practices/coping skills, physical environment, employment/working conditions, education and income/socioeconomic status. Although similar to the Report on the Health of Canadians², this document was not intended to include social support network nor biology and genetic endowment. Health services are covered within a separate initiative on system indicators currently under development. This tool is useful for calculating population health at a national, provincial or regional level. To date application at a community level has not been explored.</p>
6. Measuring Social Wellbeing ²⁷	<p>This constitutes a modification of Fordham Index of Social Health (US) for application in a Canadian context. Index of social health is expressed as a single value, the product of sixteen social and economic factors. Social and economic indicators include: infant mortality, child abuse, child poverty, teen suicide, drug abuse, high school drop-outs, unemployment, average weekly earnings, health insurance, poverty among those aged 65 years and over, out-of-pocket health expenditures for persons aged 65 years and over, highway deaths related to alcohol, homicides, persons receiving social assistance, gap between rich and poor, and access to affordable housing. Some of these factors may be useful in developing rural community health indicators.</p>
7. A Survey of Indicators of Economic and Social Wellbeing ²⁸	<p>This document discusses some of the most important single value indices that have been developed to measure economic and social wellbeing at the national and international levels. The survey of selected indexes describes time series indexes of wellbeing for Canada, cross-national indexes of wellbeing, provincial and community indexes of wellbeing in Canada, and sets of social indicators. Examines the issues involved in constructing indexes of economic and social wellbeing. Focuses on population health at a national level, and the ‘community indexes’ are also population based and do not apply to community as defined for the rural health project. However, examination of the various individual indicators that make up the indexes, may be beneficial in the efforts to build rural community health indicators.</p>
8. Assessing Rural Health: Toward Developing Health Indicators for Rural Canada ¹⁴	<p>This examines the feasibility of developing health indicators for rural Canada and discusses some of the conceptual and practical problems that may be encountered. It proposes five categories of indicators to measure: (i) health status; (ii) health determinants; (iii) health behavior; (iv) health resources; and (v) health service utilization. It discusses the challenges in understanding ‘rurality’ and moves toward a functional definition of ‘rural’ by considering ‘community’ an aggregate of two or three census sub-divisions, forming a census consolidated sub-division. It proposes a rural health indicators inventory database consisting of two main components: health indicator and dataset information sheets that may be suitable for rural community health indicators development.</p>
9. Indicators that Count Measuring Population Health at the	<p>This document is concerned primarily with community-level rather than provincial or national indicators. Ten indicator categories are divided into three sets. The first set includes six key determinants or inputs: (i) sustainable ecosystems; (ii) environmental viability; (iii) livable built environments; (iv) community conviviality; (v) social equity; and (vi) economic adequacy or prosperity. The second set involves population health</p>



Community Level ⁴	processes-of-change: (i) education; (ii) participation; (iii) empowerment and civil rights; (iv) and government performance. The third set is the outcome or health status, including positive health and negative health. Exploration of all three indicator sets warrants serious consideration for use with rural communities.
10. The FCM Quality of Life Reporting System: Quality of Life in Canadian Communities ²⁹	This uses an eight-category typology of quality of life benchmarks for application with communities rather than populations. These components include: population resources, community affordability, quality of employment, quality of housing, community stress, health of community, community safety and community participation. A template of the eight categories illustrates a series of measures and indicators for each category. It provides directions for application of each of the indicators. Examples of indicator utilization in assessing several urban communities complete the paper. Exploration of this framework and its components bears serious consideration for use with rural communities.
11. Provincial Sustainability Indicators Workbook ³⁰	This workbook identifies three dimensions requiring indicator development: (i) environment; (ii) economic and human health; and (iii) social wellbeing. Issues are discussed, and indicators proposed for discussion at meetings to be held throughout the province. Because this workbook identifies processes for indicator development, public participation, development of a framework for sustainability indicators and the criteria for indicator selection, this workbook may be very useful in efforts to build rural community health indicators.

Bureaucratic decision-making in terms of: planning, forecasting and assessment; budgeting and resource allocation; program monitoring and assessment; compensation; stimulation; and theoretical knowledge is supported through the use of indicators²¹. At the rural community level decision-making processes have more to do with empowerment and mobilization. Gathering information about a rural community is useful in order to assess capacity, empower, and facilitate and monitor action or change. Moreover, a focus on capacity development and resources within the community engenders empowerment and change with positive ramifications for health and wellbeing of rural constituents.

Framework and indicator development is a complex multifaceted process. The challenge lies in ensuring that the framework and indicators are credible, dependable and useful according to the members of the rural communities who will employ them. Forums to effectively facilitate collaborative dialogue between rural community residents

and researchers in creating frameworks and developing indicators must be organized and implemented. Whatever process is established the overriding goal will be to develop an appropriate framework with indicators that are useful to rural residents in examining the health and wellbeing of their communities. The indicators must be useful over time so they may be used to set goals, plan and implement strategies for change and evaluate the outcomes as rural communities strive to improve the health of their residents and the communities themselves.

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