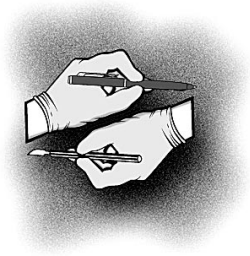

Rural community and health care interdependence: an historical, geographical study

Denise Grafton, PhD

Department Of Geography, Social Science Centre, University of Western Ontario, London, Ont.

Michael Troughton, PhD

Department Of Geography, Social Science Centre, University of Western Ontario, London, Ont.

James Rourke, MD, CCFP(EM) MCISc, FCFP, FAAFP

Dean, Faculty of Medicine, Memorial University of Newfoundland, St. John's, Nfld.

Correspondence to: Denise Grafton, PhD, Research Associate, Research, Education, Evaluation and Development (REED) Services, Middlesex London Health Unit, 50 King St., London ON N6A 5L7

This article has been peer reviewed.

The relationships between rural health care and community development were examined over time, for the case-study area of Huron and Perth counties in Southwestern Ontario. The underlying premises were that an historical–geographic study could provide both a perspective on the development of rural health services and explore the interdependent relationship between rural community and health care. The research concentrated on examinations of the 2 key elements of rural health care, namely the rural practitioner and the community hospital. Detailed reconstruction revealed that, over time, both physicians and hospitals moved from a marginal to a central position and identity within the community, in parallel with the stages of community development in the 19th and 20th centuries, with hospitals emerging as major foci of rural sustainability. In the last 2 decades, the strength of the area's rural community health system was successfully marshalled to offset the potentially negative aspects of provincial health care restructuring. This reinforced both the perception and the reality of the interdependence of health services and communities in the predominantly rural area.

On a étudié les liens entre les soins de santé ruraux et le développement communautaire au fil du temps dans la région visée par l'étude de cas (comtés de Huron et de Perth, dans le sud-ouest de l'Ontario). Les prémisses sous-tendant l'étude étaient les suivantes : une étude historicogéographique pourrait à la fois dégager un point de vue sur le développement des services de santé ruraux et explorer la relation d'interdépendance entre la communauté rurale et les soins de santé. La recherche a porté avant tout sur l'étude de deux éléments clés des soins de santé en milieu rural, soit le praticien rural et l'hôpital communautaire. Une reconstruction détaillée a révélé qu'au fil du temps, les médecins et les hôpitaux se déplacent de la périphérie vers le centre pour acquérir une identité à l'intérieur de la communauté — évolution correspondant aux stades de développement communautaire des XIX et XX^{e} siècles — les hôpitaux devenant des plaques tournantes importantes de la viabilité rurale. Au cours des deux dernières décennies, on a mobilisé avec succès la force du système de santé communautaire rural de la région pour compenser les aspects négatifs possibles de la restructuration des soins de santé mise en œuvre par la province. Cette évolution a renforcé à la fois la perception et la réalité de l'interdépendance entre les services de santé et les communautés dans la région avant tout rurale.

Introduction

The study reported upon here is concerned with health in Canadian rural communities. Taking an historical–geographical perspective, it proposes that health should be examined from the dual perspective of medical (i.e., health care issues) and geographical systems (i.e., space–time considerations). This would address adequately the change in dynamics of rural health care in Canada and the relationship between health services and rural system sustainability.

In the recent past, the study of the

problems related to rural health have been examined from either a medical perspective (for example, by physicians who are concerned about the status of rural practice[1–5]) or by geographers, who are interested in the changing spatial and temporal dimensions of health needs in rural areas and how they are different from those found in urban centres.[6–8] However, neither approach on its own presents a complete picture or basis for assessment. Consequently, this study seeks to *integrate* the 2 fields in an attempt to understand how a rural health care system has evolved, and to address its relationship to rural community development.

The term "healthy community" can be used to refer to the self-reliance, resilience, social cohesion and ability of the rural community to be self-sufficient in response to the social, political and economic stresses that are often unique to rural areas.[9] For example, Troughton[10] suggested that a healthy rural community should be defined not only in terms of its self-sufficiency, and thus its ability to provide meaningful employment or alleviate problems of poverty, but also in terms of the availability of both formal and ancillary health and social services in the community.

In rural communities in Canada, access to health care services is an important component in the self-sufficiency of a community and of its long-term viability, as acknowledged by Meredith's community viability criteria[11] and Troughton's model[12] for rural sustainability, which includes variables such as quality of life, social services, adequate number of goods and services, local employment, community self-determination and agro-ecosystem sustainability. Although it is acknowledged that providing health care services is difficult in a rural area, particularly in relation to urban counterparts, the ability to provide equitable levels of care is paramount. The development and maintenance of quality health care services ensures that rural residents have equitable levels of access to care so that their needs may be met in their own communities. As Mann[4] states, rural hospitals play an important role in the provision of health services. They cannot be identified as scaled-down versions of urban hospitals, and should not be viewed as such in the arguments for closure because they provide a basic set of services that are tailored to the needs of the community, including emergency care, maternity care and inpatient treatment of common medical problems.

In addition, the network of hospital infrastructure and personnel in rural areas provides stability in terms of direct economic activity and the community's ability to attract economic investments, as well as contributing to community security and sense of place, pride and accomplishment.[13,14] In contrast, rural hospital closures (such as occurred in 52 Saskatchewan communities) lead to issues of rural residents losing their sense of place because a significant part of their community identity was tied to a rural hospital. Following the closures, 2 types of community depression were evident: economic depression that follows hospital closure, and mental depression as a result of the loss of sense of place, loss of identity and sense of failure because a community health institution was closed and the community could not do anything to control it.[7] Similar threats have faced hospitals in rural Ontario, including the case-study area of Huron–Perth.

Rural health, especially in its current manifestation, is comprised of a large set of inter-related elements. However, the 2 key components have long been the individual rural practitioner and the rural community hospital. The former can be traced back to the early settlement periods, and hospitals become prominent in the first half of the 20th century. Together, practitioners and local hospitals are perceived by rural residents as the most important elements of their rural health system. Consequently, this study focused its attention on the changing presence and roles of doctors and hospitals within the 2 counties.

Methods

Huron–Perth case study

The adjacent counties of Huron and Perth in Southwestern Ontario were chosen for the study for 2 reasons: together they remain among the most rural-agricultural counties in Ontario, and until very recently they were administered jointly by a single health service administration. Out of a joint population of 133 376 (2001), only one centre, Stratford (29 676) in Perth County, is over 10 000, and Goderich, the Huron County seat, has just 7604 inhabitants. Between 1980 and 2002, the joint Huron–Perth Health Partnership administered health services for the 2 county areas.

The eras of development and their associated characteristics of the sequence of rural systems that comprise the temporal sequence of rural community development in Southwestern Ontario were researched. This resulting sequence (Table 1) provided the background against which the growth of rural health in Huron–Perth was investigated, par-

ticularly the role and numbers of rural physicians and the growth of rural hospitals. It was hypothesized that the development of these key medical elements would reflect the underlying stages of regional development.

Despite the obvious significance of doctors and hospitals, information about them, especially prior to the last few decades, was difficult to assemble on a common base. The study required attention to historical records, many of which were fugitive or only available in local archives. Similarly, more recent hospital information was only available at each individual site.

Doctor information was obtained through a mixture of census data (from 1851 on) from the Medical Registrar for Upper Canada (1867–1954) and the Ontario Medical Directory (1964–present). This sequence of data was compiled at regular intervals, identifying the pattern of local communities in which doctors practised over time. The information was supplemented by reference to local historical documents, including primary county, township and community histories, historic atlases, minutes of meetings, and newspaper articles relating to doctors' roles in community development and health care.

Early information on both private and public hospitals was, likewise, obtained from archival sources. In the more recent past, the individual records of each of the 8 public hospitals were studied, and supplemented by external reports (e.g., government reports such as those of the Health Services Restructuring Commission [2000]). In each case, the investigation involved reconstructing the phases of doctor and hospital activity, including the sequential mapping of their locations, the tabulating in measures (including population per physician), hospital beds and specific facilities and services offered, over time.

Findings

Table 1 sets out the criteria for and characteristics of rural community sustainability. Each criterion can be related, directly and/or indirectly to the provision and maintenance of rural health personnel and facilities.

Historically, the 2 counties had their beginnings in the settlement of the Huron Tract by the Canada Land Company in the 1830s. Settlement, which included additional areas of the Queen's Bush, saw the rapid establishment of an agrarian rural system, based on several thousand individual farmsteads and numerous small service settlements within the 27 contiguous townships of the two counties.[15] This rural farm system population peaked in the 1880s, witnessed a modest decline in the first half of the 20th century, but has climbed back to over 130 000 through the growth of Stratford and the dozen or so smaller towns and larger villages. Since 1950, agriculture has undergone major restructuring, which has resulted in fewer, larger, more specialized farms, and some "decoupling" of farm and non-farm communities.[10] Nevertheless, the farm population still

Table 1. Development eras and characteristics of the rural system[20]

Stage of development	Characteristics of the rural system	Characteristics of the rural health system
Settlement period: Pioneer (1790–1840)	Land survey Land clearing and early settlement	Initially no professional health services
Settlement period: Extensive rural settlement and growth (1840–1900)	Era of extensive rural settlement and rapid growth Growth of rural non-farm nucleated settlements Linkages established to larger urban places through railroad, trade	*Doctor-centred system* Few ancillary health workers or facilities Reliance on the local physician, travelling specialists, asylums, midwifery, private hospitals
Era of rural dominance (1880–1945)	Rural population is dominant, stable vis-à-vis urban areas (i.e., greater population) Rural system is centred on an extensive agrarian economy and lifestyle	*Rural physician–hospital centred system* Accented by construction of local cottage and public hospitals Dispersed pattern of physicians
Rural decline, rationalization and adjustment (1945–present)	Adjusting to loss of dominance with respect to urban areas Agricultural restructuring Farm consolidation, rising incidence of off-farm income Continued rural farm population decline Increasing rural population through non-farm development	*Urban hospital-centred system* Focus on centralized facillities in local urban centres and larger urban centres Restructuring of health care system Hospital closures, service reductions Shortages of general practitioners, specialists

accounts for over 15% of the total, and both counties are among the top half-dozen in Ontario in annual gross farm receipts.

Rural health system development

The results of the study are divided into 3 parts. First is the development of what we term a "physician-based system" that evolved in the 19th century in concert with the growth and peaking of the rural-agrarian community, and which has reconfigured in the 20th century alongside the hospital system. The development of the latter "doctor–hospital system," is dealt with as the second set of findings, with an emphasis on community interdependence. Finally, reference is made to the response of this community health system to the pressures of urban-oriented health restructuring in the 1990s and the issue of rural community sustainability.

The physician-based system

Pioneer settlement and early medicine

Clearing and development of the heavily forested Huron Tract (Huron and Perth counties) began in the 1830s with the Canada Company, led by John Galt and Dr. William "Tiger" Dunlop. Most initial activity focused on clearing the land and the development of a dispersed farming community for whom wheat became the dominant economic crop.[15] A large number of small communities developed as rural service centres for their surrounding nearby farm population. At this time, doctors were few and many were poorly trained or even "quacks." The population was suspicious, and many preferred to rely on traditional remedies. Midwifery was practised by local women.[16–18]

Era of rapid expansion

Between the 1840s and 1880s both farm and non-farm settlements and their populations expanded to reach a peak in the 1880s.[19] Formative elements included the development of the railway system (a key ingredient in the growth of Stratford and some smaller centres), Confederation (1867), and the shift from wheat to more stable, mixed-livestock types of farming. This period also witnessed the growth in numbers and the acceptance of physicians. This was facilitated by legislation, in particular *The Medical Act* of 1865, which helped to regulate medical practice and standards for medical education, including the establishment of the medical school in London at the University of Western Ontario (first graduating class, 1883). Doctors themselves became valued members of the community; many assumed significant administrative and political roles. In 1891, the first public hospital in the study area, located at Stratford, was opened. Figure 1 maps the distribution of physicians in the 2 counties in 1892. The numbers had risen substantially over the previous decades, peaking at 126 physicians in 1892, an increase of 113 over 1851. Mapping of earlier distributions had shown even greater dispersion,[20] but Figure 1 shows the beginnings of a concentration of doctors in the larger incorporated towns and villages.

Figure 1 and Figure 2 depict the changing population and distribution of physicians in Huron–Perth in this relatively early period of settle-

Fig. 1. Distribution of physicians and hospitals, 1892

Fig. 2. Distribution of physicians and hospitals, 1937

ment and expansion. After the peak population was reached in Huron–Perth in 1891, the number of physicians continued to increase for some time before following a decline similar to that of the general population. For example, in 1937 (Fig. 2), the emergence of a pattern of fewer practising physicians that leaned toward concentration in larger communities was evident (1941 pop., 93 436). Figure 3 shows the distribution of physicians in the post-war era (1964), when the population of the 2 counties had risen to over 110 000. In response to the growth of the population in the study area at this time, the number of physicians also increased, although by this point their growth was directed toward the rural centres that had hospitals.

Figure 4 shows the contemporary pattern of doctors and the location of the 8 community hospitals. The obvious concentration reflects the linkage of both GPs and specialists attached to the hospitals, as well as the greater mobility of rural populations. Currently, the population per physician for all doctors is 981, and the population per specialist is 1827. These ratios contrast with those present in the urban centres of London and Kitchener–Waterloo, where the population per physician in London is 767 and 1014 in Kitchener–Waterloo, and the population per specialist is 263 and 1259 respectively. The population per GP could be considered average, but there is concern over a shortage of physicians in several communities (e.g., Exeter, West Perth, Wingham).

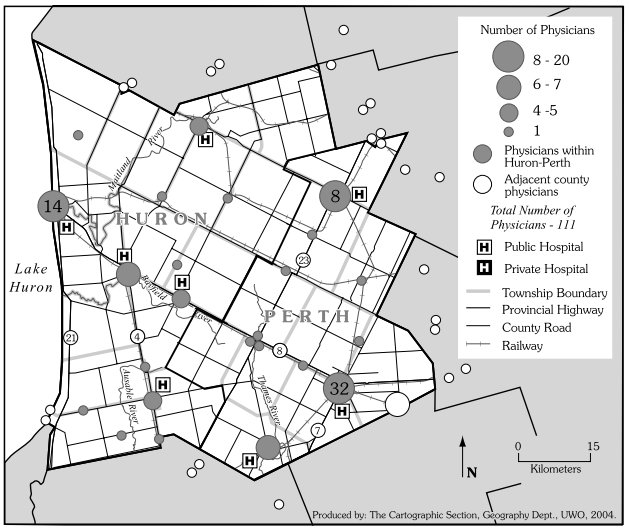

Fig. 3. Distribution of physicians and hospitals, 1964

Fig. 4. Distribution of physicians and hospitals, 2002

The doctor–hospital system

Era of rural dominance

In the 19th century, hospitals were regarded as "places of last resort," where people went to die rather than be cured, and where provision was oriented to indigents rather than those who could afford to be treated at home.[21,22] However, around the turn of the century some individuals, including both doctors and local philanthropists (e.g., IODE) established private hospitals. Many had a maternity function, and several were located in the doctors' own residences. Gradually, these hospitals established a better reputation for success, and were superceded, on an individual community basis, by public institutions. Private hospitals began to spring up in the late 1870s, initially in Stratford, and they continued to be the key source of hospital service until the 1930s. It is important to acknowledge, however, that their piecemeal growth in Huron–Perth was related to a range of community conditions and needs.

The growth of public hospitals in 8 of the larger settlements (1 city and 7 incorporated towns) in the 2 counties began as early as 1891, as previously indicated, in Stratford. For a time, many other neighbouring communities did not deem it necessary to have public hospitals of their own, because Stratford could provide the service if necessary. Over the next half century, however, the 8 communities that currently have hospitals began to erect new structures for public use (e.g., Seaforth, Listowel, and St. Marys and Exeter) or to adopt a public approach to existing private facilities (e.g., Clinton, Goderich, Wingham). In all cases, the establishment and operation was based on continuing community support, including fund-raising. Latterly, the hospital was seen as the most appropriate and tangible war memorial.

By the post World War II period, rural hospitals were established as among the most important local institutions, a source not only of employment and medical expertise, but an emblem of civic pride, and they enjoyed widespread community financial and volunteer support. For example, between 1960 and 1985 all hospitals enjoyed a period of expansion of facilities.[23] Although the period was one of urban expansion and relative rural decline, the interdependence of health service and community reached its peak. Thus, we can trace the development of physicians and hospitals within the rural setting, from suspicion to widespread acceptance and as adjuncts to sustainable rural communities.

Urban-oriented health restructuring

The period of rural adjustment

The period between 1960 and the 1980s has been identified as the most active period of rural-agricultural restructuring in southern Ontario. Major changes included a rapid reduction in the number of farm operations and their associated population. Fewer, larger, more highly capitalized and specialist operations became the norm in Huron–Perth. These changes affected the traditional agricultural service role of many communities, reinforcing some (e.g., Hensall) but diminishing the role of many of the smaller places. The non-farm population assumed a majority role, and there was growth, again concentrated in the larger settlements, notably Stratford and St. Marys, Clinton, Seaforth, Exeter, Goderich, Wingham and Listowel.

The rural restructuring supported the consolidation of both physician populations and hospitals. While the former experienced some decline, the hospitals enjoyed a period of physical and functional growth, aided by a combination of public and locally subscribed funding, thus consolidating their role in the rural system. Notwithstanding their consolidated role in the rural system, in the mid-1970s and early 1980s the rural health system, and especially its hospital component, came under attack from the provincial Ministry of Health. In Huron–Perth, this began as early as 1976 when then Health Minister, Frank Miller, attempted to close the hospital at Clinton, following the closure of the military base at nearby Vanastra. Public opposition to the closing was high, and a court injunction was sought.[24]

Again, in the 1990s, cuts to health care funding at the local level were implemented through the *Social Contract Act* (1993), resulting in "Rae Days" and pressure for increased accountability and justification for each inpatient day. In effect, the hospital system was attacked from the twin aspects of there being too many hospitals (i.e., duplication of services) and rising costs (i.e., a search for financial savings). The model being applied was that of the shift to the large, multi-functional city hospital, examples of which had existed proximal to Huron–Perth in London and Kitchener–Waterloo.

In 1996, the Hospital Services Restructuring Commission (HSRC) was established in conjunction with the *Restructuring and Savings Act*, Bill 26 (1996) to provide central control of downsizing, service rationalization and closure of hospitals. Bill 26 and its regulations essentially gave sweeping powers to the HSRC and the Minister of Health to reorganize Ontario's health system by "Direction."[25] This centralization of control by edict was perceived as a major threat to rural communities, creating a great tension between community health needs versus the needs of the overall health system, its services and facilities. In response to the system-driven health care restructuring goals, local communities in Huron–Perth initiated a study that indicated that financial losses would result from hospital closures, in addition to fears about reduced access to health care services.[14]

A resultant loss of physicians was an additional concern, since changes during this restructuring stage began to influence the ways in which rural health practice was conducted. Many rural physicians began to leave rural areas to practise more "normal" tasks and hours, many citing "burnout" and lack of opportunity for professional enrichment.[26,27] These vacancies have left some communities underserviced with respect to physicians (i.e., increasing the population per physician). In Huron–Perth, through the Underserviced Area Program, the shortfall is calculated at 8 GPs for the communities of Exeter, West Perth, Zurich and Wingham.

In response to the mandate to restructure provided through the HSRC, in 1998 the 8 hospitals of Huron–Perth joined together as a network to create the Huron–Perth Hospitals Partnership (HPHP), a system dedicated to efficiency and maintaining services at all 8 sites. The HPHP quickly made significant progress in the integration of its hospitals, programs and services, in the development of new technology in support of services delivery, and in the establishment of linkages with community organizations and the London Health Sciences Centre.[28–30] The governance model provided veto power for each of the 8 boards. At the time of its creation, the

provincial government commended the 8 hospitals in the HPHP for their vision and leadership in taking steps toward integration and coordination through their linkages and the appointment of a single CEO.

However, with the implementation of the HPHP, and a single CEO, conflicts between the issues of local autonomy and control versus centralized management soon appeared. Indeed, such issues as budgeting are among the factors that contributed to the eventual dissolution of HPHP in 2003. In July of 2002, the Stratford General Hospital announced it would be withdrawing from the partnership, and in doing so, could secede from the partnership in one year (i.e., July 1, 2003). Eventually, other members of the partnership announced that they, too, would be pulling out of the partnership. With the dissolution of the HPHP in July 2003, 2 new hospital alliances have been formed, and 2 hospitals have chosen to return to operating as separate units. For example, the Huron–Perth Health Alliance was formed through an agreement with the Stratford, St. Marys, Clinton and Seaforth hospitals (south-central Huron–Perth), and the Listowel and Wingham hospitals (north Huron–Perth) formed an alliance. Goderich's Alexandra Marine and General Hospital and Exeter's South Huron Hospital currently operate as individual entities.

Currently, the status of health care in Huron–Perth is in a state of flux. Nevertheless, the strong network of primary and ancillary health services that developed within the past 20 years is integral in providing quality care in a rural setting and will remain strong. Despite the difficulties experienced in adopting a system-wide planning relationship, but in keeping with the rural tradition to adjust to changing social, cultural and economic conditions, the hospitals and communities in the study area have responded by providing community-driven and community-oriented approaches to hospital administration and governance (e.g., the HPHP) and by focussing on community involvement and support of health ancillary services. The latter include long-term care facilities, home care and public health services and volunteerism (e.g., ladies' auxiliary, Meals-on-Wheels).

The strong linkages between rural development and society have fostered the evolution of the health care system. In the time period from the initial acceptance of health care to the present, it has been shown by our study that the role of the local community has been very important. Local funds, volunteer hours and planning were integral in the construction of local hospitals and the expansion of services and facilities over time.[23,24] Thus, it is evident that the hospital represents a key *cultural* institution in that the hospital is a living entity, one that mirrors the history of the local society. In a sense, the rural hospital is a living memorial to the community and its residents, whose role extends beyond the provision of locally based health services by expressing community identity and sense of place.

The ability of rural people to care for their own appears to be entrenched in rural culture and society; the history of Huron–Perth is punctuated by stories of communities and neighbours working together to construct simple barns and dwellings, or to build community institutions and facilities. Furthermore, the desire for the rural residents of the study area to be cared for in their communities is also important. Donations of time and money have been significant in maintaining and improving the breadth of health care services and technologies available.

This study found that health care and related institutions (e.g., the physician and the hospital) are vital components in maintaining self-sufficient, sustainable communities (i.e., the community is able to satisfy almost all relevant demands of its households).

Furthermore, the health care services are closely tied to the community identity in Huron–Perth communities. As a result, issues of local autonomy versus external system control have become very important, particularly in the wake of health care restructuring. Many other rural communities are similar in their historical/geographic community and health services development. Health care services will continue to be a vital component of successful, sustainable rural communities. In the development of both health care systems and rural communities, the important interplay and interdependency identified in this study must be incorporated into the planning and implementation development process.

Summary / Conclusions

There has been a parallel and strongly interdependent development of health care and rural communities. In the late 1800s, GPs became accepted and scattered throughout the 2 counties. Hospitals began early in the 1900s as charitable institutions and often were seen as a "place of last resort." Particularly in the period since World War II, the rural hospital became the significant focal point and vital access centre for much of rural communities' health care needs, as well as the entry point for transfer to tertiary care not available within the region. Local community citizens donated significant time and

money, particularly for needed capital, building and equipment costs beyond that provided by the provincial health care system, and were connected to the hospital through the hospital board and administration/management who lived and worked within their communities. In the recent past, however, much of this local autonomy has been eroded. In the 1990s rural communities faced physician shortages and the downsizing and threat of closure of small hospitals. This provided tension between local community-driven health care and system-controlled health care. In addition, hospitals provided major economic and employment benefits to the community. Health care restructuring provided an external system force of disruption to the complex inter-dependent relationship of rural health care and community development.

Competing interests: None declared.

References

1. Rourke J. Perspectives on rural medical care in Ontario. *Can Fam Physician* 1999l;37:1581-4.
2. Rourke J. Rural practice in Canada. In: Geyman J, Norris T, Hart L, editors. *Textbook of Rural Medicine*. New York: McGraw–Hill; 2001. p. 395-409.
3. Strasser R. Rural general practice: Is it a distinct discipline? *Aust Fam Physician* 1995;24(5):870-1,874-6.
4. Mann R. Rural hospitals in jeopardy. *Can J Rural Med* 1997;2(3):163-5.
5. Pope AS, Grams GD, Whiteside CB, Kazanjian A. Retention of rural physicians: tipping the decision-making scales. *Can J Rural Med* 1998;3(4):209-16.
6. Humphreys J, Rolley F. A modified framework for rural general practice: the importance of recruitment and retention. *Soc Sci Med* 1998; 46(8):939-45.
7. James A. Closing rural hospitals in Saskatchewan: On the road to wellness? *Soc Sci Med* 1999;49:1021-34.
8. Newbold KB, Eyles J, Birch S. Equity in health care: methodological contributions to the analysis of hospital utilization within Canada. *Soc Sci Med* 1995;40(9):1181-92.
9. Lyons R, Campbell J. *Healthy rural communities: literature review and project proposals*. Guelph (ON): University of Guelph, Network of Centres of Excellence Proposal on Sustainability of Rural Communities; 1998.
10. Troughton M. Redefining "rural" for the twenty-first century. In: Remp W, Kulig J, Townshend I, McGowan V, editors. *Health in rural settings: contexts for action*. Lethbridge (AB): University of Lethbridge; 1999.
11. Meredith ML. The prairie community system. *Can Farm Economics* 1975;10(5):19-27.
12. Troughton M. Presidential Address: Rural Canada and Canadian rural geography — an appraisal. *Can Geographer* 1995;39(4):290-305.
13. Christianson J, Faulker L. The contribution of rural hospitals to local economies. *Inquiry* 1981;18:46-60.
14. The Duffy Group. Economic impacts of hospitals on rural and northern economies: a summary of six Ontario studies [consultant's study]. Toronto; 1997.
15. Scott J. *Settlement of Huron County*. Toronto (ON): Ryerson Press; 1966.
16. Aitken A. *The book of Turnberry*. Wingham (ON): Wingham Advance-Times Printers; 1957.
17. Bender E, editor. *Magnified memories: the history of Wallace Township*. Hanover (ON): Skyway Printing; 1991.
18. Oppenheimer J. Childbirth in Ontario: the transition from home to hospital in the early 20th century. *Ont History* 1993:40-4.
19. *1881 Census of Canada*. Ottawa (ON): Dominion Bureau of Statistics.
20. Grafton D. Rural health and community sustainability in Southwestern Ontario: a case study of Huron and Perth counties [PhD Thesis]. London (ON): University of Western Ontario, Department of Geography; 2003.
21. Caniff W. *The medical profession in Upper Canada, 1783–1850*. Toronto (ON): William Briggs; 1894.
22. Godfrey C. *Medicine for Ontario*. Belleville (ON): Mika Publishing; 1979.
23. Johnston W. *History of the County of Perth, 1825–1902*. Stratford (ON): Beacon Herald; 1903.
24. Clinton Hospital Archives, Clinton Public Hospital, Clinton, Ont.
25. Health Services Restructuring Commission. *Looking back, looking forward: the Ontario Health Services Restructuring Commission (1996–2000). A legacy report.* Toronto (ON): The Commission; Mar 2000.
26. Elison G. Frontier areas: problems for delivery of health care services. *Rural Health Care* 1986;8(5):1-3.
27. Iglesias S. The future of rural health: Comprehensive care or triage? *Can J Rural Med* 1999;4(1):32-3.
28. Huron–Perth Hospitals Partnership. *Strategic plan, 1999–2004*. Seaforth (ON): The Partnership; 1999.
29. Health Services Restructuring Commission. *Rural and northern hospital networks*. Toronto (ON): The Commission; 2000.
30. *Access to quality health care in rural and northern Ontario: the rural and northern health care framework*. Toronto (ON): Ont Ministry of Health; 1997.