

Conceptualizing Health Care in Rural and Remote Pre-Confederation Newfoundland as Ecosystem

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Historical attention to the broad topic of health care for the island of Newfoundland (that is, excluding Labrador) has focused mainly on the period after Confederation with Canada in 1949.¹ Even though services for health care delivery formed an important part of discussion leading up to Confederation, knowledge of all pre-Confederation health care activities around the island of rural (mostly coastal) residents is fragmentary. Various historical studies of individuals or organizations and of particular social concerns have given us only partial glimpses of the state of health care before Newfoundland joined Canada: studies of health care practitioners may describe their work in local communities but overlook the extensive medical and surgical work of the prominent itinerant physician Wilfred Grenfell aboard ship, on the island, and in Labrador;² studies of public health usually focus on the major urban centre of St. John's and the legislative or governmental aspects of the subject;³ studies of nutrition are not contextualized for the whole island or global settings;⁴ and studies of single institutions such as the asylum and cottage hospital highlight organizational matters.⁵ Indeed, with respect to the internationally recognized medical mission of Grenfell, we know far more about the man, the home-based "industrial" work, nurses, and organizational affairs than we do about the mission's delivery of health care to actual patients in Newfoundland communities for the several decades before Confederation. Similarly, as this quick

overview indicates, owing to a pervasive view of medicine from the top of society as a matter for the state and state regulation, much (if not most) of the literature about Newfoundland explicitly and implicitly equates health and health care services with public health measures.⁶ More recent studies of Newfoundland before 1949 begin to offer new perspectives (as we will show), but they still focus on only one aspect of health care services, such as the practitioners or organizations that delivered health care services. Study of the history of medicine for the whole island has yet to be done.

The piecemeal nature of this published historical literature about Newfoundland thus impedes historiographical discussion. In addition, knowledge of actual health care practices itself for the whole island has relied on inward-looking accounts. Whether by scholars or by contemporaries, these accounts present contradictory, negative, or biased perspectives, but with one main theme: that health care in Newfoundland before 1949 was inadequate or substandard compared with the state-based progress that followed the island's entry into Canada. Moreover, studies of health care lack analysis of a broader range of primary sources to substantiate this perspective, including wide investigation of clinical evidence generated by many practitioners and organizations in the course of their medical work. Apparently only the records of the private Grenfell mission hospital in St. Anthony have attracted attention for studies of specific diseases in the period, the Spanish flu and beriberi.⁷ Most primary information about the whole island has derived instead from personal narratives of individual practitioners in remote communities; such anecdotal accounts normally raise questions about reliability, and read collectively, they also emphasize hardships of professional and personal isolation, harsh terrain or climate, and a large range of conditions treated with minimal access to sophisticated medical technology. They are, in short, heroic accounts for general readers.⁸ As international studies of health care and its delivery outside urban settings have shown, however, such trends, attitudes, challenges, and conditions are common everywhere. Yet few studies have either examined Newfoundland in this rural, global context or synthesized the extant publications on pre-Confederation Newfoundland to explore similarities with other jurisdictions or states in the same historical period. Many of these concerns key into a distinct and well-established discipline of historical inquiry, the history of medicine, a discipline that has so far not been employed to examine the topic of health care for the whole of Newfoundland in the pre-Confederation era.

In this research note, we do not propose to attempt a historiographical

analysis of the fragmentary literature (which would certainly be a useful undergraduate exercise), but rather we identify common preconceptions in earlier studies and challenge these preconceptions, first, by suggesting that the whole of Newfoundland in this period should be situated within a global context (especially of islands); and, second, by positing the concept of a health care ecosystem viewed from a history of medicine perspective. This ecosystem concept, we hope to show, enables re-conceptualization of the totality of health care and its delivery in pre-1949 Newfoundland. Many health policy analysts favour the metaphor of *ecosystem* over others such as *military* or *market*, but it has yet to be used in historical research.⁹ While we recognize the existence of a hierarchical arrangement that may not be static, the concept of an ecosystem easily encompasses notions of interaction, overt and/or hidden interdependence, adaptability, and co-operative activities that are especially relevant to the historical study of Newfoundland. As we discuss here, it serves to reconcile discrepancies in the historical record between negative representations of health and medicine in Newfoundland and evidence of positive accomplishments in the whole range of health care delivery methods before 1949.

CROSSROADS AND LABORATORY: PLACING NEWFOUNDLAND MEDICALLY AND HISTORICALLY

The island of Newfoundland indisputably has a unique history, with unique sense of place. Known as a “crossroads of the world” owing to its strategic North Atlantic location, with its long history as a resource-extraction or rural economy through centuries of itinerant work followed much later by settlement, it is not surprising to find transplantation of formal health care delivery approaches from the “home” countries of its eventual settlers. From the United Kingdom came trained midwives, nurses, and doctors (including the medical missionary, Wilfred Grenfell), along with the cottage hospital concept; under Grenfell and his mission, physicians, nurses, and medical students from the United States and Canada worked in both Newfoundland and Labrador. Recently published studies offer a detailed investigation or more nuanced perspective of each of these kinds of imported health care delivery and services. For example, after discussing the development in the 1930s of government-owned cottage hospitals inspired by and compared with the Scottish model, Gordon Lawson and Andrew Noseworthy suggest the importance of the Newfoundland experience as the foundation for government engagement in publicly funded health care services

and, in turn, Canada's national hospital insurance program; they also indicate that the Newfoundland government relied on Grenfell's medical mission to provide health care services for both Labrador and the northern coast of Newfoundland, and consequently chose not to build cottage hospitals in this region.¹⁰ With respect to nurses, Linda Kealey explores the professional life of one notable nurse-midwife, Myra Bennett, who arrived from England in 1921 to settle in a coastal community roughly midway between the southern limit of that serviced by the Grenfell mission and the closest cottage hospital, and whose work over the next 50 years was respected by physicians.¹¹ Other studies by Heidi Coombs-Thorne about nurses in the Grenfell mission, based on archival research mostly for the period after Confederation, addressed the often paternalistic social milieu in which they worked.¹²

Recent work by J.T.H. Connor has marshalled several forms of historical evidence, mostly archival, to examine in depth the complex social and clinical history of medicine in Twillingate. He shows how much the establishment of the Notre Dame Bay Memorial Hospital owed not just to the organizational influence of Wilfred Grenfell, as previously known, but also to the financial support of New York City philanthropists, the local inhabitants who donated physical labour and what spare cash they had, as well as the transplanted medical students, doctors, and nurses who developed its solid reputation for service. This hospital was thus very much "owned" by the people by virtue of the sweat of their collective brow, just as it was "owned" by members of the merchant class who constituted the hospital's board of directors. In this regard, this important node of medical care on the island reflected other local communities that invested their time and labour in building government-funded cottage hospitals. Moreover, the community in Notre Dame Bay adopted a style of socialized medicine for the hospital: a contract system that would offset hospital bills of the local population. Connor's analysis of the diary and other archival documents of Robert Ecke, one of the physicians who travelled to work in the hospital from Johns Hopkins University in Baltimore, suggests that the period of the late 1930s to 1940s was a "golden era" for rural medicine in Newfoundland: with immense breadth and depth, it embraced almost every facet of interventionist and preventive medical care imaginable at the time. Letters that Connor excerpts verbatim from patients in Ecke's personal files also cast valuable light from the patient's perspective on health care practice in the area—its broad geographic base, the medium through which patients and their families received medical information away from the hospital, and the local dialect for laboratory tests and medical symptoms or conditions.¹³

These recent article-length studies examine aspects of health care delivery throughout the island of Newfoundland, and, as local or occupational studies, they do not claim to reflect health care in the whole island. Nevertheless, they offer foundational interpretations of the history of medicine that use a broader range of primary sources than the conventional legislative and government records of general historians in order to construct the kind of complete picture of health care “on the ground” that has long been required in contemporary historiography in the field. In contrast, earlier writers about Newfoundland often made declarations about the whole of health care services in the island before 1949. Moreover, in so doing, they exhibited an evident bias: they typically juxtaposed a rhetoric of deprivation with a record of satisfactory performance. “Health and welfare conditions in Newfoundland are bad,” declared an economist and a political scientist, who then offered an arguably positive analysis of a network of health care workers, cottage hospitals, and amenities that seemed to serve the people well.¹⁴ This period had been nothing but “the dole, the dole bread [baked with brown, not white, flour], the tuberculosis and the beriberi,” proclaimed politician Joseph R. Smallwood in one of his 1948 speeches in support of Confederation with Canada, which he made many times to thousands of people.¹⁵ Smallwood and later commentators maintained such a jaundiced view to emphasize a direct contrast to the progress and modernity that followed: a “revolution has swept Newfoundland since confederation in 1949,” he declared. “Swift improvements in our education, health, transportation and communication facilities have set the stage for further economic growth. . . . If the progress since confederation might be counted as considerable . . . this progress will nevertheless seem puny in comparison with the growth I envisage for Newfoundland over the coming decades.”¹⁶ In the same publication, S.J. Colman of Memorial University also invoked the concept of revolution and indicated that progress meant Newfoundlanders “no longer having to take their sick in small boats to seek medical assistance at a sometimes distant cottage hospital.”¹⁷ However, those commentators — such as Smallwood — who stressed that the roads built after Confederation superseded coastal methods of transportation tended to downplay the fact that most roads were unpaved and disrupted communications between settlements more than linking them. They also overlooked the role of the train, which brought many patients to hospitals in St. John’s, for example.¹⁸

The overarching theme of inexorable progress in these commentaries was echoed in journalist A.B. Perlin’s belief in 1970 that “great modern hospitals” had sprung up in the 1950s and 1960s, which was “all very much to the good.”¹⁹

He also cautioned that modernity seemed to become almost an “obsession,” and that the “province has been precipitated like a rocket into a more sophisticated age and perhaps Newfoundlanders have been trying to adapt too quickly.” Certainly it is possible that attempts in the 1970s to bring health care services to remote regions distorted perceptions of the past, especially among medical practitioners themselves. Dr. Ian Rusted, founder of the province’s only medical school, along with other influential medical authors, ignored the 1930s and 1940s in retrospectives of health care in Newfoundland, skipping immediately from the early 1900s to the post-World War II period, their own experiential frame of reference; and the Northern Medicine and Health Program of Memorial University, established in 1977 within this context of modernity, stopped within a few years in 1984 owing to improvements in technology and expanded health care services. Practitioners’ views may also have been influenced by lack of analysis for the period: only one history of Newfoundland medicine appeared in 1928, understandably as an appendix in a Canadian survey, and presented the subject up to the twentieth century from a practitioner’s perspective that, too, emphasized the notion of progress.²⁰

Scientific attention to Newfoundland in this period no doubt helped to consolidate the perception of widespread deprivation. For a research team in 1945, the island was an “ideal laboratory for investigation of the value of various therapeutic procedures,”²¹ and studies of the population in some areas were thus used to support competing philosophies about malnutrition. After W.R. Aykroyd first studied beriberi in Newfoundland for his medical thesis in 1928, when he was head of the UN Food and Agriculture Organization he pursued new research to buttress his contention that malnutrition was less a medical problem and more one of politics and economics. Contrasting his European approach was the American one that malnutrition was a biomedical problem, with eradication achieved through technical fixes such as enriched flour. The philanthropic foundation of the main proponent of this approach, R.R. Williams, who synthesized vitamin B₁ (thiamine), funded several research teams, which concluded that the nutrition of Newfoundlanders had been improved by the introduction of vitamin-enriched foods.²² This and related research was of international importance, in addition to its regional significance.

Against this background was cast the enormous shadow of Dr. Wilfred Grenfell and the clinical activities of his private medical mission, which those within Newfoundland ignored or glossed over when they considered the health care situation throughout the island. Managed for 20 years by the Royal National Mission to Deep Sea Fishermen, all the activities in Newfoundland

and Labrador became the responsibility of the newly formed International Grenfell Association in 1914. Early on, as leader of this mission activity, Grenfell was resented in St. John's, publicly rebuked on one occasion as an outsider who degraded Newfoundlanders by presenting slide shows of "the most offensive caricatures" as though they represented normal conditions in the whole country.²³ As late as 1986 a Memorial University Faculty of Medicine bibliography on health care in the province did not provide Grenfell the physician with a separate subject entry, subsuming him instead under the International Grenfell Association; furthermore, this bibliography excluded medical or clinical items from the mission magazine, *Among the Deep Sea Fishers*, on the grounds that the magazine was then being indexed separately (this publication is now digitized and online). However, so famous was Grenfell internationally that he captures the three entries on "Rural Health and Pioneer Practice" for Newfoundland in a historical bibliography for Canadian medicine published in 1984; only in the second volume of this bibliography in 2000 do three more entries appear in this section (most printed or published within the province).²⁴ Even so, these items are still biographical rather than clinical, including two more about Grenfell. These approaches to Grenfell the man in the historiography suggest several conceptual standpoints: internalist vs. external perspectives of those in and outside of Newfoundland; centre vs. periphery views of those in and outside of the main metropolis of St. John's; and health care delivery implicitly defined by internalist critics as a concern solely of the state. Nevertheless, as indicated even by the government's incorporation of his mission into its plans for cottage hospitals, the fact remains that over much of the twentieth century Grenfell's mission addressed a need in extremely remote areas that was not met by either the government or other missionaries at the time.

Also overlooked or downplayed in commentaries are informed contemporary observations and actual surveys of health care. Thomas Lodge, an English civil servant, who was Commissioner for Public Utilities in Newfoundland from 1934 to 1937, gave a positive assessment of the health care facilities available in the capital city of St. John's: "medical organization which in its human as in its material resources need fear no comparison with that of any other city of its size in the Empire."²⁵ Although his commissioner role may cast this observation in doubt for those who rue the British-appointed form of government in this period, other analysts from outside Newfoundland brought similar perspectives to bear on their assessments of health care in the whole island. The noted consultant Harvey Agnew, for example, observed in his 1952 survey of hospital facilities for the Newfoundland Department of Health that the "boat service has been very

helpful in getting the doctors about and in maintaining transportation facilities between nursing stations and the nearby hospitals.” Furthermore, Agnew concluded that the cottage hospital system “has been of tremendous *value to the people . . . the qualifications of the doctors* in the service are high . . . the hospitals are quite well equipped and the *surgical results* have been excellent” (emphasis in the original).²⁶ Similarly, the *Newfoundland Health Survey Committee Report*, a requirement of Confederation, noted that around and before 1949 the vast majority of the Newfoundland population had access to primary care through a variety of schemes: government-sponsored prepaid medical and hospital care plans (cottage hospitals); voluntary prepaid hospital schemes such as that of Twillingate’s Notre Dame Bay Memorial Hospital and the industrial mill company hospitals at Grand Falls, Corner Brook, and Buchans; the hospital and medical services of the International Grenfell Association; and commercial insurance plans such as Blue Cross and the Maritime Hospital Services Association, whose subscribers lived primarily in St. John’s.²⁷ So pervasive were most of these schemes that almost a decade and a half earlier, in 1940, US Assistant Surgeon General R.A. Vonderlehr had reported that “the provision for medical care of the people in Newfoundland at public expense is more effectively developed administratively than in any part of the United States.”²⁸

After Newfoundland joined Canada, possibly deeply influenced by the rhetoric of Smallwood,²⁹ the first and long-standing Premier of the new Canadian province, practitioners and historians alike generally have ignored or overlooked informed surveys of health care and have even questioned contemporary assessments that do not fit the prevailing Whiggish view of Newfoundland history. One of the province’s leading historians considered Assistant Surgeon General Vonderlehr’s positive evaluation to be a “surprising observation”;³⁰ and a recent history of the modern-day province by another leaves the impression that the non-democratic Commission of Government formed during the 1930s was doing little to address the medical needs of the people, or that not much of any non-governmental hospital services or related health care delivery existed: discussion of the extensive work of the cottage hospitals, floating clinics, Grenfell mission and other private hospitals, individual practitioners, and so on is thin to lacking.³¹ Only one historian has made the perceptive, salient, and necessary distinction between government policy on welfare and that on public health: Terry Bishop-Stirling noted the former was a failure while the latter was flexible, taking into account Newfoundland’s social and economic circumstances. She concludes that Dr. Harris M. Mosdell, Secretary of the Commission’s Department of Public Health and Welfare, “set up a

workable administrative structure, established guidelines, set priorities and most importantly, laid the basis for permanent, well-trained staff.³² This evaluation echoes Commissioner Lodge's informed opinion:

If the Commissioner for Public Health and Welfare had been responsible for the health services only it is safe to assume that he would have been the least criticized of all the six Commissioners. Unfortunately for his popularity the functions of his department included the distribution of able-bodied relief [the dole], a duty which presented the most difficult of all problems with which the Commission was faced.³³

Even the international research attention to Newfoundland in the 1940s has been addressed only recently, in a study by Linda Kealey of nutritionists contracted to design public education programs. Her allusion to government medical officials persuading American scientists to downplay the image of abject poverty and widespread malnutrition as unrepresentative of the whole island suggests that concepts of rhetoric, reality, health, and place must be explored to achieve an informed and balanced medical history.³⁴ To date, however, no historian of medicine has examined the broad topic of health care in Newfoundland before 1949 — including actual medical records — to situate it within appropriate historical context.

THE EXCEPTIONALISM OF NEWFOUNDLAND? OR HEALTH CARE ECOSYSTEM?

Such a pervasive and fundamental tension in earlier representations of all health care in Newfoundland calls for analysis: that is, after advances to medicine and health care in post-Confederation Newfoundland many commentators deemed anything that was not “modern” before 1949 to be intrinsically unsatisfactory, ineffectual, or inefficient. Contradictory representations aside, according to accepted measures of evaluating health, it is clear that progress was indeed made after Confederation with Canada. With respect to infant mortality, for instance, in 1999 the rate for Newfoundland and Labrador was approximately 5 in every 1,000 live births (roughly comparable to the Canadian rate),³⁵ whereas 60 years earlier — in “the most favorable year on record” for Newfoundland — the rate had been approximately 93 per 1,000 (double the best rate in Canada, which was then 45 per 1,000 live births).³⁶ With

respect to disease, malnutrition was found in some localities at certain times of the year and tuberculosis *was* a serious problem. Many Newfoundlanders in the 1930s were on the dole (as were most Depression-era peoples). However, emphasizing these factors without comparison to similar jurisdictions in the same period tends to skew the vision of Newfoundland's past and eclipses all that might have been good.

Therefore, it would be more helpful to contextualize the pre-Confederation Newfoundland experience within studies of remote areas not just in Canada but also around the world, especially to scrutinize three assumptions behind the earlier retrospective views that looked inward:

1. That people in Newfoundland suffered more than others and had less access to health care than people in both the mother country (United Kingdom) and neighbouring countries (Canada and the United States).
2. That the Newfoundland experience is unique, distinct even from similar or related experiences in remote/rural — especially northern — places.
3. That missions — especially the Grenfell mission — and their hospitals be excluded from notions of a health care “system” because they were private, philanthropic, religious, self-serving with respect to Wilfred Grenfell, and not embedded in government programs.

Furthermore, to view health care and medical practice in the pre-Confederation era not with the anachronistic concept of “modernity,” or with a contemporary lens that would always find the earlier parameters of health care lacking, we suggest a metaphor of ecosystem: that is, conceptualizing health care delivery, in which the needs and expectations of residents shaped (and were shaped by) the competency of doctors, nurses, midwives, and others who took into account geographical and cultural conditions and amenities, allows us to hypothesize that the health care “system” — whatever its deficiencies — functioned in an efficacious and efficient way.

The concept of ecosystem is not new, and it may run the risk of becoming cliché in its application to almost everything in contemporary discourse — framed in part by the recent debates over the health care system in the United States, and even used to describe the “Occupy Wall Street” movement — but it is a useful construct to describe the historical situation in Newfoundland. In their discussion of the concept, S.T.A. Pickett and M.L. Cadenasso explore its three dimensions: its basic definition; its application via models to specific situations; and its metaphorical connotations within science and the general

public. Based on their analysis of the literature, study of a health ecosystem for Newfoundland would resemble a non-equilibrium qualitative model with features emerging from the nature of the material itself. In other words, rather than determining features of an ecosystem model based on questions guiding the research, in keeping with a human ecosystem model, we posit a health care situation in pre-Confederation Newfoundland that exhibits persistence, qualitative states, dynamic fluctuations, and “pulses of resources or regulators.” In addition, this health care situation exhibits “multiple domains of attraction, shifting stable states, spatially dynamic mosaics, and system resilience”³⁷ that could be explored more fully with this metaphor.

In this ecosystem view, health care services evolve in niches smaller than the political unit of Newfoundland in response to shifting political and environmental states of the Atlantic coast. It illustrates how disregarding these individual communities or regions can lead to assumptions that the worst served characterize the state of affairs throughout the island. The concept has rich potential for uncovering the good that might have been achieved in health care, broadly construed. Similarly, adopting the ecosystem metaphor expands our historical understanding by incorporating all those involved in dispensing health care, including licensed and community midwives, the pre-Confederation equivalent of nurse-practitioners, and the self-help practices of laypersons. This metaphor also incorporates the general public as community partners in health care delivery. Finally, it holds promise to increase general understanding of what happens when a health care ecosystem is subjected to new pressures such as industrialization; demographic shifts due to population relocation; and centralized administrative and health care delivery practices. This view would thus help to inform further understanding of rural medicine in Newfoundland, if not any other particular region. In sum, within the ecosystem metaphor, health care can be linked to the broader socio-economic, political, and environmental milieu when appropriate. In so doing, it may show that isolated areas are not necessarily as developmentally slow as often perceived by those in cosmopolitan areas.

RECONCEPTUALIZING THE HEALTH CARE MAP IN PRE-CONFEDERATION NEWFOUNDLAND

Conceptualizing an “ecosystem” for Newfoundland brings all facets of the island’s scattered health care delivery and medical practice immediately into

view. These facets do not form a “system” in the conventional sense of the term, which implies state-run practices and facilities. However, the tradition of domiciliary practice by physicians and nurses, along with lay and trained midwives (who were “all-purpose” healers), joined with organized means of health care delivery to construct a distributed network of care that was generally accessible to most people at the local level, especially around the turn of the twentieth century: in addition to the (relatively inexpensive) activities of five Grenfell hospitals and seven Grenfell nursing stations, there were 14 government cottage hospitals (later 18); six government nursing stations; seven government hospital ships with diagnostic and preventive health services (e.g., the *Lady Anderson* and *Christmas Seal*); the Newfoundland Outport Nursing and Industrial Association; one asylum, one sanatorium, one non-denominational and two church-affiliated hospitals in St. John’s; the Notre Dame Bay Memorial Hospital in Twillingate; and three hospitals in the mill and mining towns of Grand Falls, Corner Brook, and Buchans. Especially noteworthy were the number of young, physically and intellectually vigorous physicians and nurses coming into remote areas fresh from elite American medical schools so that, despite difficulties in travel, equipment, and living conditions and the relatively short stays of these men and women, rural and remote residents were seen by the most up-to-date practitioners.³⁸

Hence, although settlements just before Confederation were dispersed, as most communities were coastal, a kind of health care ecosystem existed in Newfoundland. Once centralized, as in the resettlement plan of Smallwood — who aimed in this way to consolidate the population and provide services in “growth centres” — after an initial period of unparalleled affluence for the new Canadians after 1949, problems emerged because of Western medicine’s reliance on sophisticated technology and related processes in modern health care delivery. The whole “system” then had to cover a massive geographical area with constantly escalating demands and inability to match them.

In addition, it is important to realize that despite tremendously high rates of infectious diseases such as tuberculosis, the gulf between urban and rural practice of medicine was not as wide as it was later (as the Agnew report in 1952 indicated); that is, medicine was neither as specialized nor as dependent on technology as it was later in the century. In short, the demand for, and expectations of, organized medicine in this period roughly matched what it was capable of delivering to society. And in this regard, Newfoundland was not alone: studies of rural and remote regions, both contemporary and in the 1930s to 1940s, strongly suggest that more similarities than differences exist

globally in the delivery of health care.³⁹ Indeed, re-examination of the three earlier assumptions about Newfoundland through research on primary source (clinical) materials enables a truer picture to emerge of medicine and health care delivery in an island population before “modernization.” Furthermore, to paraphrase Graham Moon from the inaugural issue of *Health & Place*, understanding the “space/time diversity of the epidemiological transition” is particularly relevant to the study of Newfoundland: health development cannot be considered as a “uniform unfolding in which progress leads inexorably towards advanced national health status, rather it deals with situations which are place-specific and time-specific, reflecting particular articulations of societies and the health of their members.”⁴⁰

Use of the ecosystem metaphor in this way sheds light on the currently fragmented picture of medicine and health care delivery in pre-Confederation Newfoundland by keying it as well to a different historiography: not one of Newfoundland history, but one that focuses on region, the significance of place in health and health care, and rural medicine.⁴¹ The unique role of Newfoundland as both “crossroads” and “ideal laboratory” provides insights into remote medical practice and research in the period while integrating and informing perspectives of health care outside Canada.⁴² Its study in this context entails some of the “detailed reconnaissance work” that historians have sought in order to begin to understand “how setting shapes the organization of health services”;⁴³ it also relates specifically to studies of islands while addressing regional themes suggested by Canadian historian Megan Davies.⁴⁴ In these ways, within the larger context of rural medicine (and its evolving definition),⁴⁵ a reconceptualized history of pre-Confederation Newfoundland affords a case study of methods of delivering health care to remote regions in general; such a history may hold implications for modern-day health policy research⁴⁶ while recognizing contemporary themes for health services research, especially in the North.⁴⁷

As we have been pursuing research on health care in pre-Confederation Newfoundland, we have kept this ecosystem frame of reference uppermost in mind. It has brought to the fore almost identical perspectives of practitioners and researchers “on the ground” at the time. In 1911, Grenfell mission physician Arthur W. Wakefield toured communities outside St. John’s on behalf of the Association for the Prevention of Consumption, curious “to compare the conditions in South Newfoundland with those already known to us in the ‘sphere of influence’ of the Royal National Mission to Deep Sea Fishermen in the north of the island.” As he wrote in the mission magazine, his first trip revealed conditions “very far in advance of anything we had ever seen in the north. The

people were prosperous, the houses clean, consumption, though present, was not unduly prevalent, and the sanitary condition of affairs was not quite so bad as we had been led to suppose." Because Wakefield later discovered that "this was one of the most advanced districts, if not the most advanced, in the country," he took another journey to a mixed-class district where he found "a very different state of things": "Even in a certain outport, which is one of the largest and most prosperous in Newfoundland, a condition of affairs was found which would not be tolerated for one moment in the smallest and unenlightened hamlet in England." Admittedly some of Wakefield's concerns were initially driven by a public health initiative; however, even in this role he recognized he was somehow misled about the whole island and individuals settling it. Furthermore, Wakefield had made similar, carefully qualified observations about different communities — and their individual inhabitants — in Labrador: "The filthy condition of some of the houses, especially on certain parts of the coast, is utterly indescribable. . . . This criticism, of course, only applies to certain parts, where the people are exceptionally ignorant, dirty and stupid. The houses of the more intelligent settlers are as clean as houses could be found anywhere, and I would gladly take my meals off the floor of the house in which I am now writing."⁴⁸ Dr. Robert Ecke echoed the latter observation in his diary more than two decades later, about a family in Manual's Cove: "They must be the poorest people in Twillingate, but their house is the one where I would take a visitor to see a really lovely fisherman's home. Clean, neat, attractive garish wallpaper. Curtains of bleached flour bags with colorful bits of cloth appliquéd to make borders. The kitchen has lots of hooked rugs, a well-shined low stove, a few homemade chairs, and a good-looking sideboard, also homemade."⁴⁹

Inconsistencies among communities also appeared in a nutritional survey in 1933. Margery Vaughn and Helen S. Mitchell were from the Battle Creek (Michigan) Sanitarium and Battle Creek College operated by the Seventh-day Adventist denomination under the directorship of the famous health reformer, Dr. John Harvey Kellogg (with whom Grenfell shared a mutual admiration for espousing the tenets of "right living"). Their survey identified chronic constipation, malnutrition, dental problems, and low resistance to diseases such as tuberculosis in some communities around St. Anthony; but they concluded that it was "futile" to "correlate food supply to nutrition diseases," for some outports with relatively better food supplies also had higher rates of the deficiency disease beriberi. In Deadmans Cove, for example, which had the highest number of cows (for milk) and the largest availability of potatoes and other vegetables, 15 per cent of the population suffered from beriberi; similarly,

in Green Island Cove, almost one-quarter of the population had beriberi, despite one of the higher cow-to-person ratios as well as a better supply of potatoes and other vegetables. Conversely, Savage Cove and Flowers Cove, which were relatively worse off with respect to food supply, had the lowest rates of beriberi. The researchers explained these perhaps unexpected results as likely due to the “wide extremes encountered among the families of certain villages.”⁵⁰ Such reasoning once again underscores the fact that making any generalizations across communities — or within communities — regarding nutritional and disease status in Newfoundland is fraught with difficulty.

Clearly, these keen observers, who consciously compared individuals and individual communities, did not share the views of those who later promulgated a portrait of extreme deprivation for the whole island for its entire history prior to Confederation with Canada, and they thus provide valuable insights within the context of their own time. Further work may reveal the extent to which Smallwood’s rhetoric in particular spouted schoolboy notions, perhaps imparted by American Depression-era textbooks on health, nutrition, and public health that were assigned by the Department of Education and widely circulated to Newfoundland children.⁵¹ Or, indeed, it may determine the degree to which such rhetoric was self-referential, as contemporaries in the early twentieth century recognized occurred with mass persuasion.⁵²

In the meantime, we have been addressing the ecosystem concept incrementally through several forms of historical evidence in studies of key nodes in the delivery of health care for the island outside of St. John’s. For example, J.T.H. Connor published a reprinted 1933 report on the activities of the Notre Dame Bay Memorial Hospital in Twillingate that shows the degree to which the island’s health care activities were closely intertwined: although the hospital did not belong to the International Grenfell Association, it remained closely tied to Grenfell, who commissioned the report and selected a Grenfell mission alumnus to undertake the medical audit and site visit. The resulting report concluded that despite the difficulties of hospital practice in a remote area, the performance was that of a Grade A hospital. For medical historians, the detailed report demonstrates how busy and up-to-date the hospital was, and itself invites reflection on the prevalent notion that pre-Confederation health care in Newfoundland was lacking.⁵³ Connor has now extended the analysis presented in this report to examine combined Twillingate and St. Anthony hospital activities in depth.⁵⁴ As he shows, after the St. John’s medical establishment maintained that no hospitals existed beyond the capital city, Wilfred Grenfell invited the American College of Surgeons (ACS) to study these two

hospitals for its rigorous accreditation standards. Both hospitals not only successfully achieved the ACS accreditation, but they were among the 20 per cent approved for the whole of North America. Despite sometimes spotty or unavailable data, their annual reports of descriptive statistics for the 1920s to 1930s reveal the extent of the work they undertook. Between 1926 and 1937, for instance, the St. Anthony hospital had over 6,000 people admitted and almost 34,000 treated as outpatients. Although most of the patients were from the general region, almost 15 per cent came from across the entire island, including St. John's, and from coastal Labrador. In both hospitals, the primary reason for admission was a surgical procedure; surgery was also inextricably linked to tuberculosis (which was not just pulmonary). Most significant were the technology and treatments used: from 1918 the only place in Newfoundland, and north of Halifax in Canada, to have radium was St. Anthony; not surprisingly, patients came from all around the island for treatment of their cancers, and by the mid-1930s their numbers rose dramatically to hundreds each year. Similarly, the Twillingate hospital acquired an electrocardiograph machine (ECG) for cardiac examinations around 1936, just when this technology was becoming widely accepted in leading teaching and research hospitals in the United States and the United Kingdom; again, no hospital in St. John's could match this capability.

In addition, with funding from a Canadian Institutes of Health Research grant⁵⁵ and the substantial support and help of Labrador-Grenfell Health, the current health authority, our team of two medical historians, a physician, and a health policy analyst, along with research assistance, has worked over the past five years to access, preserve, and anonymize clinical admission case-books created by the Grenfell mission hospital in St. Anthony. From an anticipated "vacuum" approach to gathering evidence from every conceivable kind of source in print and manuscript form, the corralling of this rich resource of unprocessed primary material has therefore taken priority in our research. For the approximately 15,000 extant chronological records from 1904 to about 1940 that we redacted, saved electronically, and stored in a secure location, we designed a separate index (database), in part with our ecosystem notion in mind, to identify not just health care workers (physicians and nurses), diagnoses, treatments, and patients (age, sex, residence, religion, occupation) but other information such as mode of travel. The design phase had its first time-consuming and cumbersome iteration before we returned to the simpler process of using the Microsoft Office Access program to provide the sophisticated version of file cards that we envisaged.

Completing detailed entries for the database, which required close reading of the daily clinical records in various manuscript hands before they were typewritten (around 1918), has provided unique insights into the state of health care before Confederation for a large number of Newfoundlanders — including those referred to and from St. John's hospitals or travelling around the island. This node of the island's ecosystem was vital to the provision of modern health care to a far greater degree than earlier writers and the St. John's medical establishment would know or acknowledge. Given the narrative nature of the records within a formulaic framework (a millennia-long medical tradition),⁵⁶ they reveal patients' social background and occupational conditions, along with patients' comments and activities; attitudes of physicians towards their patients and of patients towards the hospital; health care workers as patients; and other medical activities of the mission organization (such as the orphanage). All of this qualitative information has been identified in our database as a critical aspect of contemporary methodology in the history of medicine. Indeed, such identification fits methodologies in related disciplines as well. As Julia Epstein long ago suggested, for us to understand medical discourse, it needs to be viewed in relation to other explanatory uses of narrative language:

Physicians act as ethnographers, historians, and biographers when they take patient histories and when they write up case reports. Recognizing these historiographic functions of the diagnostic process in the context of other kinds of historiography allows us to recognize as well the way medical practice participates in the production of cultural discourses.⁵⁷

Using a separate report software program (Crystal Reports), our database can be queried in a methodical way to uncover historical trends and identify all the cases for analysis from a variety of historiographical perspectives.

Preliminary consideration of about 2,600 extant records for the period 1904 to 1919 uncovers the peaks of activity owing to seasonal ailments and transportation or the availability of visiting specialists such as an ophthalmologist or dentist; that is, the records increase numerically during summer months, and consecutive pages become dominated with a typhoid outbreak in one community, or with eye operations or dental work. They demonstrate the degree to which the whole region from Twillingate to St. Anthony was a catchment area for patients, making the need for a hospital in Twillingate a clear

and persuasive endeavour with Grenfell's support: approximately 30 per cent of patients came from the immediate local region, while 26 per cent (the single second largest group) arrived from the Notre Dame Bay area; the remainder came from almost all around the coast of the island, including St. John's. Corroborating information about patients being transported to and from St. Anthony (usually on the S.S. *Prospero*) and expressions of gratitude from patients for their care there can all be found in the public press.⁵⁸

The clinical records also show how much the hospital in northern Newfoundland relied on American facilities and leaders in medical specialties: pathological specimens were usually sent to Baltimore for testing, with results received fairly quickly; on one occasion in 1910, Wilfred Grenfell performed a neurological operation for epilepsy after receiving advice from Harvey Cushing, the renowned surgeon then at Johns Hopkins who was the founding father of neurosurgery and of endocrinology.⁵⁹ Not only can we quantify and analyze the range of procedures performed by Grenfell himself, but we can compare them with those of other physicians in his mission. For instance, preliminary analysis shows that the average length of stay for patients admitted to the St. Anthony hospital between 1904 and 1919 was 25 days. If the admission/discharge practices of specific doctors are analyzed, however, it becomes clear that American-trained physicians such as Drs. John Little and Charles Curtis were very close to the overall average length of stay (24 days and 27 days, respectively), while British-trained physicians such as Drs. Wakefield, Grenfell, and Stewart kept their patients in hospital longer than was typical (30 days, 35 days, and 37 days, respectively). Many practical and clinical reasons might explain these trends, including wait times for travel by regular boats,⁶⁰ but the fact remains that because the hospital in St. Anthony attracted an international medical staff, study of it and the staff prompts lines of historical inquiry that transcend merely the local Newfoundland situation.

In short, an "ecosystem" concept renders such study more meaningful by identifying all the aspects at play in individual communities around Newfoundland. Health care delivery never was a centralized system on the island owing to the existence of several different modes and models of formal and informal patient care and financing that functioned quite independently of each other, yet frequently were interlinked. The metaphor of an "ecosystem" is useful to study the Newfoundland situation because of its notions of discrete medical communities (with and without clear boundaries) that often influenced each other in unplanned or unintended ways, although they may not all have been administratively or directly connected. It is also useful for placing

such individuals as Wilfred Grenfell into the context of their region and era, without diminishing their pivotal role as community leaders, advocates, and visionaries. That is, Grenfell, as medical man, missionary, and myth, was “one of a kind” — hence the influence he exerted is unlikely to be matched elsewhere — but he mirrored other strong, pioneering men and women who similarly helped shape how health care was delivered in their rural region. More importantly, analyzing clinical records generated by personnel associated with the island part of his mission for the first time allows a deeper understanding of the full spectrum of medicine and health care delivery in Newfoundland before Confederation, including the degree to which they (and their counterparts in Twillingate) led the Dominion — and parts of Canada — in highly specialized health care delivery using sophisticated technology.

NOTES

1. For example, Linda Kealey and Heather Molyneux, “On the Road to Medicare: Newfoundland in the 1960s,” *Journal of Canadian Studies* 41, 3 (2007): 90–111.
2. J.T.H. Connor, “Rural Medical Lives and Times” [review essay], *Newfoundland and Labrador Studies* 23 (2008): 231–43; Ronald Rompkey, ed., *Labrador Memoir of Dr. Harry Paddon, 1912–1938* (Montreal and Kingston: McGill-Queen’s University Press, 2003); Ronald Rompkey, *Grenfell of Labrador: A Biography* (Toronto: University of Toronto Press, 1991; reprint ed. Montreal and Kingston: McGill-Queen’s University Press, 2009).
3. Melvin Baker and Janet Miller Pitt, “A History of Health Services in Newfoundland and Labrador to 1982,” at: <www.ucs.mun.ca/~melbaker/PublicHealthNL.pdf> (with a version published in the *Encyclopedia of Newfoundland and Labrador*, vol. 2 [1984], 864–75); Melvin Baker, “The Development of the Office of a Permanent Medical Health Officer for St. John’s, Newfoundland, 1826–1905,” *HSTC Bulletin* 7 (1983): 98–105.
4. Maura Hanrahan, “Pine-Clad Hills and Spindrift Swirl: The Character, Persistence, and Significance of Rural Newfoundland Foodways,” in Franca Iacovetta, Valerie J. Kornek, and Marlene Epp, eds., *Edible Histories: Towards a Canadian Food History* (Toronto: University of Toronto Press, 2012), 85–93; Seantel Anais, “(Mal)Nutrition and the ‘Informal Economy’ Bootstrap: The Politics of Poverty, Food Relief, and Self-Help,” *Newfoundland and Labrador Studies* 24 (2009): 239–60; Maura Hanrahan, “Tracing Social Change among the Labrador Inuit and Inuit-Metis: What Does the Nutrition Literature Tell Us?” *Food, Culture, and Society* 11, 3 (2008): 315–33; James Overton, “Brown Flour and Beriberi: The Politics of Dietary and Health Reform in Newfoundland in the First Half of the Twentieth Century,” *Newfoundland Studies* 14 (1998): 1–27.
5. Patricia O’Brien, *Out of Mind, Out of Sight: A History of the Waterford Hospital* (St. John’s: Breakwater, 1989); Edward F.J. Lake, *Capturing an Era: History of the Newfoundland*

- Cottage Hospital System* (St. John's: Argentia Pilgrim, 2010); John K. Crellin, *The Life of a Cottage Hospital: The Bonne Bay Experience* (St. John's: Flanker Press, 2007).
6. Indeed, despite its general title and well-articulated discussion of the wide scope of Newfoundland health services in Baker and Pitt's online essay, the "history of health" in the opening sentence shifts immediately to "public health" in the next; the original essay was published in 1984 with the title "A History of Health." See Baker and Pitt, "A History of Health Services in Newfoundland and Labrador to 1982." Clearly, recognition of the need to clarify the focus on public health has occurred over the past 30 years. A recent history of Newfoundland and Labrador does not include medicine, health care, or related topics in its index but addresses the topic very briefly as "the government's efforts in public health care": see Sean T. Cadigan, *Newfoundland and Labrador: A History* (Toronto: University of Toronto Press, 2009), 219–20. It is therefore worth emphasizing here for a broad readership that terms such as "medicine," "medical care," "health care," "medical services," "nursing," "primary care," "surgery," "surgical procedures," "hospitals," and "clinics" do not mean *public health*. As we will indicate, while issues of public health — a much larger subject and scope of affairs at the level of population, not individuals — inevitably become the concern and purview of individual medical practitioners, these are not the purpose of their training or activity as physicians for the treatment and care of individual patients and their ailments.
 7. Craig T. Palmer, Lisa Sattenspiel, and Chris Cassidy, "Boats, Trains, and Immunity: The Spread of the Spanish Flu on the Island of Newfoundland," *Newfoundland and Labrador Studies* 22 (2007): 473–504; William R. Knowling, "Lifestyles of the 'Poor and Destitute': Beriberi in Northern Newfoundland from 1905 to 1934," Honours thesis (Memorial University of Newfoundland, 1991). The records of the International Grenfell Association have only recently been fully processed and made available, with finding aids, at The Rooms, St. John's. These records do not include patient files, but may reveal information useful for such historical study of health in the island. No one has yet analyzed patients' information included in the personal papers of mission doctors housed at other archives such as Yale University.
 8. J.T.H. Connor, "Putting the 'Grenfell Effect' in Its Place: Medical Tales and Autobiographical Narratives in Twentieth-Century Newfoundland and Labrador," *Papers of the Bibliographical Society of Canada* 48 (2010): 77–118. See, for example, Noel Murphy, *Cottage Hospital Doctor: The Medical Life of Dr. Noel Murphy, 1945–1954*, ed. Marc Thackray (St. John's: Creative, 2003); Robert Skidmore Ecke, *Snowshoe & Lancet: Memoirs of a Frontier Newfoundland Doctor, 1937–1948* (Portsmouth, NH: Peter E. Randall, 2000); Gordon Thomas, *From Sled to Satellite: My Years with the Grenfell Mission* (n.p., 1987); Brian P. Harris, *Good as the Sea. Rural Newfoundland: Medical and Other Experiences, 1955–1958* (St. John's: Faculty of Medicine, Memorial University of Newfoundland, 1990). The extensive primary literature of the Grenfell mission that includes first-hand accounts of actual patients seen, their conditions, and the treatments given has not yet been analyzed; for example, Fullerton L. Waldo, *With Grenfell on the Labrador* (New York: Fleming H. Revell, 1920), and especially the mission's magazine, *Among the Deep*

- Sea Fishers* (1903–81), which has only recently been completely digitized and posted online for the early period (available at Memorial University, Digital Archives Initiative).
9. Harri Laihonon, "Knowledge Structures of a Health Ecosystem," *Journal of Health Organization and Management* 26 (2012): 542–58; David Welbourn, Dean Fathers, and Alison Holbourn, "A New Vision for Care: Looking Beyond the NHS to the Whole Care Ecosystem," *Perspectives in Public Health* 131, 3 (2011): 109–11; Muriel R. Gillick, "Medicine as Ecoculture," *Annals of Internal Medicine* 151 (2009): 577–80; J.A. VanLeeuwen, D. Waltner-Toews, T. Abernathy, and B. Smit, "Evolving Models of Human Health toward an Ecosystem Context," *Ecosystem Health* 5, 3 (1999): 204–19; George J. Annas, "Reframing the Debate on Health Care Reform by Replacing Our Metaphors," *New England Journal of Medicine* 332, 11 (1995): 744–47.
 10. Gordon S. Lawson and Andrew F. Noseworthy, "Newfoundland's Cottage Hospital System: 1920–1970," *Canadian Bulletin of Medical History* 26, 2 (2009): 477–98, reprinted in Gregory P. Marchildon, ed., *Making Medicare in Canada: New Perspectives on the History of Medicare in Canada* (Toronto: University of Toronto Press, 2012), 229–48. Based on work by J.T.H. Connor, Lawson and Noseworthy include brief discussion of the hospital payment plan adopted in Twillingate to buttress their argument about the national hospital insurance program, even though the Notre Dame Bay Memorial Hospital is not a cottage hospital: see J.T.H. Connor, "Twillingate," in "A Medical History of Newfoundland and Labrador" (special issue), *Newfoundland Quarterly* 100, 1(2007): 12–15, 30–33.
 11. Linda Kealey, "On the Edge of Empire: The Working Life of Myra (Grimsley) Bennett," in Myra Rutherfordale, ed., *Caregiving on the Periphery: Historical Perspectives on Nursing and Midwifery in Canada* (Montreal and Kingston: McGill-Queen's University Press, 2010), 84–105. For earlier studies of midwives and nurses, see Cecilia Benoit, *Midwives in Passage: The Modernisation of Maternity Care* (St. John's: Institute of Social and Economic Research, 1991); Janet McNaughton, "The Role of the Newfoundland Midwife in Traditional Health Care, 1900 to 1970," Ph.D. dissertation (Memorial University of Newfoundland, 1989); Rhoda Maude Piercey, *True Tales of Rhoda Maude: Memoirs of an Outport Midwife*, ed. Janet McNaughton (St. John's: Faculty of Medicine, Memorial University of Newfoundland, 1992); Margaret Giovannini, *Outport Nurse*, ed. Janet McNaughton (St. John's: Faculty of Medicine, Memorial University of Newfoundland, 1988); Edgar House, *The Way Out: The Story of NONIA in Newfoundland, 1920–1990* (St. John's: Creative, 1990); H. Gordon Green, *Don't Have Your Baby in the Dory: A Biography of Myra Bennett* (Montreal: Harvest House, 1973).
 12. Heidi Coombs-Thorne, "Conflict and Resistance to Paternalism: Nursing with the Grenfell Mission Stations in Newfoundland and Labrador, 1939–81," in Rutherfordale, ed., *Caregiving on the Periphery*, 210–42; Heidi Coombs-Thorne, "'Mrs. Tilley had a very hasty wedding!': The Class-Based Response to Marriages in the Grenfell Mission of Newfoundland and Labrador," *Canadian Bulletin of Medical History* 27 (2010): 123–38.
 13. Connor, "Twillingate," and J.T.H. Connor, "'Medicine Is Here to Stay': Rural Medical Practice, Frontier Life, and Modernization in 1930s Newfoundland," in J.T.H. Connor

- and Stephan Curtis, eds., *Medicine in the Remote and Rural North, 1800–2000* (London: Pickering & Chatto, 2011), 115–27.
14. R.A. MacKay and S.A. Saunders, “Public Health and Welfare,” in R.A. MacKay, ed., *Newfoundland: Economic, Diplomatic, and Strategic Studies* (Toronto: Oxford University Press, 1946), 170.
 15. Robert Paine, “Smallwood: Political Strategy, and a ‘Career’ of Rhetoric,” *Newfoundland Studies* 3 (1987): 217–26. Smallwood’s penchant for embellishing and stretching facts to the point of telling “tall tales” is explored in Robert Paine, “The Persuasiveness of Smallwood: Rhetoric of *Cuffer* and *Scoff*, of Metonym and Metaphor,” *Newfoundland Studies* 1 (1985): 57–75.
 16. Joseph Smallwood, “Foreword,” in R.I. McAllister, ed., *Newfoundland and Labrador: The First Fifteen Years of Confederation* (St. John’s: Dicks and Company, n.d. [1965]).
 17. S.J. Colman, in McAllister, ed., *Newfoundland and Labrador*, 10.
 18. Jennifer J. Connor and Angela J. Hyde, “Dr. Nigel Rusted, a CMAJ Centenary Reader,” *Canadian Medical Association Journal (CMAJ)* 183, 7(2011): E361–E365. DOI:10.1503/cmaj.101858
 19. A.B. Perlin, “History and Health in Newfoundland,” *Canadian Journal of Public Health* 61 (1970): 313–16.
 20. Ian Rusted, “Changes in Newfoundland Medicine: A 50-year Perspective,” *MUNMed* 10, 3 (1998), at: <www.med.mun.ca/munmed/103/RUSTED.htm>; “The Early Days of the Medical School at Memorial University of Newfoundland: Northern Medicine and Health Program,” at: <www.med.mun.ca/earlydays/pages/08health_care/01health_care_in_nfld.html>; John J. Heagerty, *Four Centuries of Medical History in Canada, and a Sketch of the Medical History of Newfoundland*, 2 vols. (Toronto: Macmillan, 1928).
 21. J. Metcoff, G.A. Goldsmith, A.J. McQueeney, R.F. Dove, E. McDevitt, M.A. Dove, and E.J. Stare, “Nutritional Survey in Norris Point, Newfoundland,” *Journal of Laboratory and Clinical Medicine* 30 (1945): 487.
 22. Robert R. Williams, *Toward the Conquest of Beriberi* (Cambridge, Mass.: Harvard University Press, 1961), 176–89; Kenneth J. Carpenter, *Beriberi, White Rice, and Vitamin B: A Disease, a Cause, and a Cure* (Berkeley: University of California Press, 2000); Michael Ackerman, “The Nutritional Enrichment of Flour and Bread: Technological Fix or Half-Baked Solution,” in Lisa Rosner, ed., *The Technological Fix: How People Use Technology to Create and Solve Problems* (New York: Routledge, 2004), 75–91. Briefly, the Department of Supply of the Newfoundland government, on the recommendation of the Nutrition Council of the Newfoundland Medical Association, required that all flour imported from Canada and the United States would be enriched with synthetic vitamin B. Presumably to avoid any comparison with the brown flour or “dole flour” of the 1930s, officials were quick to point out that the colour, texture, flavour, and baking qualities of the flour would not be affected. See “Enriched Flour,” *Western Star* (Corner Brook), 14 June 1944; “Only Enriched Flour to Be Imported,” *Family Fireside* (St. John’s), June 1944.
 23. Rompkey, *Grenfell of Labrador*, 123.
 24. Isabel Hunter and Shelagh Wotherspoon, *A Bibliography of Health Care in Newfoundland*,

- ed. Kenneth B. Roberts, Occasional Papers in the History of Medicine, No. 6 (St. John's: Faculty of Medicine, Memorial University of Newfoundland, 1986), rev. ed. *Newfoundland and Labrador Health Bibliography*, at: <capelin.library.mun.ca/nlhb/>; Charles G. Roland, comp., *Secondary Sources in the History of Canadian Medicine: A Bibliography* (Toronto: Hannah Institute for the History of Medicine, 1984); Charles G. Roland and Jacques Bernier, comps., *Secondary Sources in the History of Canadian Medicine: A Bibliography*, vol. 2 (Waterloo, Ont.: Wilfrid Laurier University Press, 2000).
25. Thomas Lodge, *Dictatorship in Newfoundland* (London: Cassell, 1939), 227.
 26. Harvey Agnew et al. (Neergaard, Agnew and Craig, Hospitals Consultants), *Hospital Facilities in Newfoundland: A Study Conducted for the Honourable J.R. Chalker, Minister of Health* ([Toronto]: 1952), 82.
 27. [Health Survey Committee, (Leonard Miller, chair)], *Newfoundland Health Survey Committee Report* (St. John's, [1956]), ch. 7.
 28. R.A. Vonderlehr and Roger E. Heering, *Report of a Survey on Civil Health Services as They Relate to the Health of Armed Forces in Newfoundland* (Washington: United States Public Health Service, 1940), in James E. Candow, "An American Report on Newfoundland's Health Services in 1940," *Newfoundland Studies* 5 (1989): 229. (The reprinted version of the document inaccurately identified the senior author as Vanderlehr).
 29. Paine, "Smallwood"; Paine, "Persuasiveness of Smallwood." A Canadian historian described Smallwood as having "all the sublime assurance of a biblical prophet and all the low cunning of a twentieth-century propagandist . . . [and a] talent for spontaneous burlesque and ridicule": Donald Creighton, *The Forked Road: Canada, 1939–1957* (Toronto: McClelland & Stewart, 1976), 146. Aspects of Smallwood's career, especially as it connected with broadcasting and the power of radio as a communication medium in Newfoundland, are explored in Jeff A. Webb, *The Voice of Newfoundland: A Social History of the Broadcasting Corporation of Newfoundland, 1939–1949* (Toronto: University of Toronto Press, 2008), 95–97.
 30. Peter Neary, "Venereal Disease and Public Health Administration in Newfoundland in the 1930s and 1940s," *Canadian Bulletin of Medical History* 15 (1998): 141.
 31. Cadigan, *Newfoundland and Labrador: A History*.
 32. Theresa Lynn Bishop, "Public Health and Welfare in Newfoundland, 1929–1939," MA thesis (Queen's University, 1984), 102.
 33. Lodge, *Dictatorship in Newfoundland*, 229.
 34. Linda Kealey, "Historical Perspectives on Nutrition and Food Security in Newfoundland and Labrador," in C.C. Parrish, N.J. Turner, and S.M. Solberg, eds., *Resetting the Kitchen Table: Food Security, Culture, Health and Resilience in Coastal Communities* (New York: Nova Science, 2007), 177–90. Kealey notes the indebtedness of her work to Gail Lush, "Nutrition, Health Education, and Dietary Reform: Gendering the 'New Science' in Northern Newfoundland and Labrador, 1893–1928," MA thesis (Memorial University of Newfoundland, 2008).
 35. Centre for Newfoundland and Labrador Health Information, *HealthScope: Reporting to Newfoundlanders and Labradorians on Comparable Health and Health System Indicators*

- (St. John's: Department of Health and Community Services, Government of Newfoundland and Labrador, 2002).
36. MacKay and Saunders, "Public Health and Welfare," 170.
 37. S.T.A. Pickett and M.L. Cadenasso, "The Ecosystem as a Multidimensional Concept: Meaning, Model, and Metaphor," *Ecosystems* 5 (2002): 1–10.
 38. Details of the M.V. *Christmas Seal* are available in House, *The Way Out*. On the Notre Dame Bay Memorial Hospital, see Connor, "Twillingate"; Gary L. Saunders, *Doctor Olds of Twillingate: Portrait of an American Surgeon in Newfoundland* (St. John's: Breakwater, 1994). On the M.V. *Lady Anderson*, see Nigel Rusted, *It's Devil Deep Down There* (St. John's: Creative Publishers, 1987).
 39. Josep L. Barona and Steven Cherry, eds., *Health and Medicine in Rural Europe (1850–1945)* (Valencia: Seminari d'Estudis sobre la Ciència, 2005); Milton I. Roemer, "Historic Development of the Current Crisis of Rural Medicine in the United States," in Solomon R. Kagan, ed., *Victor Robinson Memorial Volume: Essays on History of Medicine* (New York: Froben Press, 1948), 333–42; A.J. Boyd, *Pioneer Health: Analysis of a Survey of the Health of Saskatchewan Residents 1878 to 1914* (Saskatchewan, Occupational Health Reports, No. 2, June 1971).
 40. Graham Moon, "(Re)placing Research on Health and Health Care," *Health & Place* 1, 1 (1995): 3.
 41. Connor and Curtis, eds., *Medicine in the Remote and Rural North*; Erica Dyck and Christopher Fletcher, eds., *Locating Health: Historical and Anthropological Investigations of Health and Place* (London: Pickering & Chatto, 2011); Rutherford, ed., *Caregiving on the Periphery*; Barona and Cherry, eds., *Health and Medicine in Rural Europe*; Moon, "(Re)placing Research on Health and Health Care"; Roemer, "Current Crisis of Rural Medicine in the United States."
 42. Jack M. Colwill and James M. Cultice, "The Future Supply of Family Physicians: Implications for Rural America," *Health Affairs* 22 (Jan.–Feb. 2003): 190–98.
 43. Peter L. Twohig, "Written on the Landscape: Health and Region in Canada," *Journal of Canadian Studies* 41, 3 (2007): 8.
 44. Megan J. Davies, "Mapping 'Region' in Canadian Medical History: The Case of British Columbia," *Canadian Bulletin of Medical History* 17 (2000): 73–92; David R. Phillips, "Islands, Health and Development," *Health & Place* 1, 4(1995): 195–97.
 45. Michael J. Troughton, "Redefining 'Rural' for the Twenty-First Century," in William Kampt et al., eds., *Health in Rural Settings: Contexts for Action* (Lethbridge, Alta: University of Lethbridge Press, 1999), 21–38; G.W.N. Fitzgerald, "The *Canadian Journal of Non-Urban Medicine*?" *Canadian Journal of Rural Medicine* 11 (2006): 183–84; Raymond W. Pong and Roger J. Pitblado, "Don't Take Geography for Granted! Some Methodological Issues in Measuring Geographic Distributions of Physicians," *Canadian Journal of Rural Medicine* 6 (2001):103–13; Alun E. Joseph and Peter R. Bantock, "Rural Accessibility of General Practitioners: The Case of Bruce and Grey Counties, Ontario, 1901–1981," *Canadian Geographer* 28 (1984): 226–39.
 46. Michael J.L. Kirby and Marjory LeBreton, *The Health of Canadians: The Federal Role,*

- vol. 2: *Current Trends and Future Challenges* (Ottawa: Standing Committee on Social Affairs, Science and Technology, Parliament of Canada, 2002); Roy J. Romanow, *Building on Values: The Future of Health Care in Canada* (Ottawa: Commission on the Future of Health Care in Canada, 2002); Maria Mathews and Alison C. Edwards, "Having a Regular Doctor: Rural, Semi-urban and Urban Differences in Newfoundland," *Canadian Journal of Rural Medicine* 9, 3 (2004): 166–72.
47. T. Kue Young and Susan Chatwood, "Health Care in the North: What Canada Can Learn from Its Circumpolar Neighbours," *CMAJ* 183, 2(2011): 209–14; *Listening for Direction III: Report on the Northern Dialogues. Final Report to Health Canada, October 2007* (Canadian Health Services Research Foundation, 2008), at:<www.cfhi-fcass.ca/sf-docs/default-source/listening-for-direction/LfDIII-NRFinal_ENG_05_09_08.pdf?sfvrsn=0>.
 48. A.W. Wakefield, "The Anti-Tuberculosis Campaign of the Labrador Mission," *Among the Deep Sea Fishers* 9 (Oct. 1911): 24; Arthur W. Wakefield, "Winter Work at Cartwright," *Among the Deep Sea Fishers* 8 (July 1910): 22.
 49. Quoted in Connor, "Medicine Is Here to Stay," 139–40.
 50. Margery Vaughn and Helen S. Mitchell, "A Continuation of the Nutrition Project in Northern Newfoundland," *Journal of the American Dietetic Association* 8 (1933): 526–31.
 51. J.Mace Andress and I.H. Goldberger, *Broadcasting Health* (Boston: Ginn and Company, 1933), outlined the basic scientific elements of nutrition and deficiency diseases such as beriberi for senior elementary students; during the 1940s it was used in schools in Newfoundland. For brief reviews of this text, see *American Journal of Nursing* 33 (1933): 1015, and *Journal of the American Medical Association* 101 (1933): 1262.
 52. On the practice of mass persuasion at this time, see the seminal but tendentious work by George Creel, *How We Advertised America: The First Telling of the American Story of the Committee of Public Information That Carried the Gospel of Americanism to Every Corner of the Globe* (New York: Harper & Brothers, 1920).
 53. J.T.H. Connor, "The Notre Dame Bay Memorial Hospital, Twillingate, 1933: An Institutional Profile in a Time of Transition," *Newfoundland and Labrador Studies* 28 (2013): 293–330.
 54. J.T.H. Connor, "Ministering to the Sick in a Remote Place: The International Grenfell Association, Hospitals, and Health Care in Newfoundland, 1920s–1930s," draft manuscript; an earlier paper, "Laying the Foundation for Primary Health Care in Newfoundland during the 1920s to 1930s," was presented at PriFor 2013: The Primary Healthcare Partnership Forum, St. John's, Nov. 2013.
 55. Jennifer J. Connor, J.T.H. Connor, Maria Mathews, and Monica G. Kidd, "Interpreting Remote Medicine and Health Care in Pre-Confederation Newfoundland as 'Ecosystem,'" CIHR Grant HOM 98740. Versions of this discussion were presented at the following conferences: J.T.H. Connor and Jennifer J. Connor, "Medicine at the Crossroads of the North Atlantic: Health, Place, and Region in Pre-Confederation Newfoundland," American Association for the History of Medicine conference, Baltimore, Apr. 2012; J.T.H. Connor, Jennifer J. Connor, Monica Kidd, and Maria Mathews, "Were Past Times Good Times in Their Own Way? Interpreting Medicine and Health

- Care in Pre-1949 Newfoundland as ‘Ecosystem,’ poster, PriFor 2010: The Primary Healthcare Partnership Forum, St. John’s, Nov. 2010.
56. See, for example, special and cluster issues of *Literature and Medicine*: “The Art of the Case History,” 11 (Spring 1992), especially Julia Epstein, “Historiography, Diagnosis, and Poetics,” *Literature and Medicine* 11 (1992): 23–44, and “Medical Case Histories as Genre,” 32 (Spring 2014): vii–132. Also see Brian Hurwitz, “Form and Representation in Clinical Case Reports,” *Literature and Medicine* 25, 2 (2006): 216–40; Irma Taavitsainen and Paivi Pahta, “Conventions of Professional Writing: The Medical Case Report in a Historical Perspective,” *Journal of English Linguistics* 28, 1 (2000): 60–76; Kathryn Montgomery Hunter, *Doctors’ Stories: The Narrative Structure of Medical Knowledge* (Princeton, NJ: Princeton University Press, 1991), especially ch. 5.
 57. Epstein, “Historiography, Diagnosis, and Poetics,” 38.
 58. For example, see patients identified from Cape Norman, Bay Roberts, Greenspond, Conception Bay, Croque, Twillingate, and Conche in “Here and There,” *Evening Telegram* (St. John’s), 4 June 1910, 4; “Here and There,” *Evening Telegram*, 11 Dec. 1911, 8; “Sent to Hospital,” *Evening Telegram*, 18 July 1911, 6; “Cured at St. Anthony,” *Evening Telegram*, 20 July 1912, 2; “Obituary,” *Evening Telegram*, 12 Dec. 1913, 9; George Ridout, “A Restored Patient,” *Twillingate Sun*, 9 Jan. 1909, 1; John Dawer, “Note of Thanks,” *Evening Telegram*, 10 June 1909, 7. One patient headed there from Burin changed his mind, to have his operation in St. John’s instead: “Will Have an Operation,” *Evening Telegram*, 21 Sept. 1911, 4. The fact that Grenfell routinely promoted his mission and advertised the availability of visiting specialists affords additional evidence of attracting patients from St. John’s and environs. See, for example, Wilfred T. Grenfell, “Eye Specialist,” *Evening Telegram*, 16 May 1911, 7.
 59. Michael Bliss, *Harvey Cushing: A Life in Surgery* (Toronto: University of Toronto Press, 2005); Anne Bennett Swingle, “Those Summers Down North,” *Hopkins Medical News* (Spring 2003), at: <esgweb1.nts.jhu.edu/hmn/S03/annals.cfm>. At this time, Cushing was on the board of the Grenfell Association of America.
 60. For information about the connection between the arrival and departure times of boats transporting patients (especially the fortnightly S.S. *Prospero*) and the length of hospital stays, see A.W. Wakefield, “St. Anthony Items,” *Among the Deep Sea Fishers* 7 (Jan. 1910): 27–28.