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An International Mapping of Medical Care in Nursing Homes

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ABSTRACT

Nursing home (NH) residents are increasingly in need of timely and frequent medical care, presupposing not only available but perhaps also continual medical care provision in NHs. The provision of this medical care is organized differently both within and across countries, which may in turn profoundly affect the overall quality of care provided to NH residents. Data were collected from official legislations and regulations, academic publications, and statistical databases. Based on this set of data, we describe and compare the policies and practices guiding how medical care is provided across Canada (2 provinces), Germany, Norway, and the United States. Our findings disclose that there is a considerable difference to find among jurisdictions regarding specificity and scope of regulations regarding medical care in NHs. Based on our data, we construct 2 general models of medical care: (1) more regulations—fee-for-service payment—open staffing models and (2) less regulation—salaried positions—closed staffing models. Some evidence indicates that model 1 can lead to less available medical care provision and to medical care provision being less integrated into the overall care services. As such, we argue that the service models discussed can significantly influence continuity of medical care in NH.

KEYWORDS: Nursing homes, physician, care, regulation, international

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Background

The provision of high-quality medical care is vital for the well-being of nursing home (NH) residents, especially given trends for an increase in complex medical, psychological, and social needs. Nursing home residents are increasingly in need of rapid, frequent, and/or continuous medical care, presupposing not only available but perhaps also continual—as opposed to fragmented—medical care provision in NHs. The provision of this medical care is organized differently both within and between countries, which may in turn profoundly affect both the overall quality of life and care provided to NH residents.

In this article, we describe and compare the policies and practices guiding how medical care is provided across Canada (2 provinces), Germany, Norway, and the United States. This study was conducted as part of a research program titled, "Long-Term Residential Care: An International Study of Promising Practices" that examined differences in NH/residential care across these and other countries. The term "nursing home" is defined and used differently between jurisdictions, sometimes not used at all in favor of, for instance, "(long-term) care facility." For the sake of comparison, we will in this article

use the term "nursing home" and highlight jurisdictional differences in the result section, when relevant.

Research on staff and staffing levels in NHs and equivalent institutions has been directed primarily at registered nurses, assisting nurses and their equivalent groups (eg, licensed practical nurses and nursing assistants). Regulations and guidelines for these nursing standards are formalized in most jurisdictions, although their scope and level of detail vary considerably from one jurisdiction to the next.^{1,2} Less attention has been directed at 2 other groups of employees at NHs: assistants (and their equivalent groups, eg, personal care workers) and physicians, respectively, constituting vital parts of the "machinery" of the NH. Medical care in NHs, primarily provided by physicians, has been particularly understudied concerning the policies and regulations affecting them. There is, in short, a dearth of research on physician care in NHs in general³ but also in research directed at health care system comparisons across countries.⁴ These 2 elements will be addressed in this article, by analyzing variations in regulations and guidelines as well as practice pattern relating to medical care in selected countries.

The aim of this article is to describe and compare the different approaches to providing NH medical care across the



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aforementioned 5 jurisdictions. Our analyses are presented in 2 sections. First, we describe each jurisdiction in terms of the (1) government regulations and public policies available to guide physician-based NH care, (2) strategies used to reimburse physicians providing NH care, and (3) different models of medical care that can be said to follow from 1 and 2. Second, we compare across jurisdictions the similarities and differences in care approaches, including how they may affect the quality of medical care provided to NH residents.

Several authors have noted that NH residents are a vulnerable population with comorbid and often advanced medical conditions, predisposing their need for high-quality medical care that is effectively integrated with other care services.⁵⁻⁷ Accessible, coordinated, and continual medical care services are highlighted in the research literature as significant. The need to continually improve the provision of medical care will most likely increase in the future, as NHs are projected to care for a growing number of increasingly frail older adults with substantial medical needs.⁸

Medical care services are provided mostly by physicians. The *availability* of physician services—for example, how much time physicians spend at NHs, how often they assess residents, and how available they are when offsite—has been shown to significantly affect the quality of NH resident care, particularly at end of life^{6,9} and with respect to hospitalization rates.¹⁰⁻¹² Research also shows that the use of alternate physician services or emergency departments as opposed to a regular or “house” physicians can vary significantly between NHs.¹³

Moreover, given the shortage of primary care physicians, general practitioners, geriatricians, and internists working in NHs,¹⁴ the United States in particular has witnessed an increase in NH medical care provided by alternative professionals such as nurse practitioners (NPs), clinical nurse specialists (CNSs), and physician assistants (PAs).¹⁵ Other countries such as Norway and Germany have not experienced an increase in the NH care provided by these alternative practitioners, although stakeholders in Norway, for instance, have suggested that the use of these equivalent groups may be an effective solution to the current challenges with recruiting physicians.¹⁶

Nursing home models of medical care can be broadly categorized as open or closed.⁵ Nursing homes using an open medical care model typically allow any willing physician to care for residents, whereas a closed medical model only allows preselected physicians to provide such care. These models may, as we shall see, have an impact on access and quality of care.

More broadly, governmental regulations and public policies regarding medical services in NHs, whether local, regional, or national, have generally not been studied, certainly not with the aim of cross-national comparisons (see also the work by Wendt and colleagues⁴). Given the importance of medical service practices and models, and financial systems found in recent research, it is appropriate to compare these variations across select international jurisdictions.

Such an approach can provide information that has value for helping consumer advocates, NH providers, and policy-makers understand both the scope and jurisdictional differences in how medical care is provided in NHs and for considering the benefits and potential challenges associated with these different care approaches.

Methods

Conceptual framework

This study used the conceptual framework of Wendt and colleagues⁴ for conducting health care system comparisons. This model identifies 3 major dimensions of health care systems: (1) financing, (2) service provision, and (3) regulation. The state, nongovernmental actors and the market can all be involved in health care, so a research framework should combine these aspects with the aforementioned dimensions in a systematic way. This approach allows researchers to develop a typology that can be used to compare selected counties.

Data

All coauthors of the study are part of the larger research project titled “Long-Term Residential Care: An International Study of Promising Practices.” As part of this initiative, coauthors collected from their jurisdictions descriptive data about the involvement of physicians (and other medical care providers) in providing medical care, specifically identifying the general policies, employment types, and reimbursement models governing NH medical care. Data were collected from official legislations and regulations, academic publications, and statistical databases, in each jurisdiction. In several of the jurisdictions, key informants were interviewed to obtain additional information to add to publicly available data or to supplement with data that were not publicly available.

Data were collected from Norway, Germany, the United States, and Canada. The delivery of health care is a provincial matter under the Canadian constitutions, and as such there are large differences in NH medical care models across provinces. Therefore, we have chosen to treat British Columbia (BC) and Manitoba as 2 separate Canadian jurisdictions. Data are therefore presented across 5 jurisdictions.

Based on the conceptual framework of Wendt and colleagues⁴ for health care system comparison, our authorship team created a template to guide data collection and interpretation within each region. We described and compared medical services in NHs focusing on 3 major dimensions: (1) regulations and public policies governing use, (2) financing systems, and (3) service provision (eg, medical practice patterns and models). For purposes of relevance and applicability to our current topic, these key themes were further operationalized into subthemes.

For government regulations and public policies, 4 areas were examined: (1) level of governance and type of regulation, (2) level of detail, (3) coverage of regulation (eg, all

versus select NHs), and (4) accountability and sanctions. For the medical practice patterns and models, 5 areas were examined: (1) type of medical care providers (physician, other professional groups), (2) type of employment (employed or self-employed, employed by whom), (3) distribution of type of medical care providers, (4) staffing model (open versus closed), and (5) regularity of medical services. For the financing system, 2 dimensions were examined: (1) overall financial system and (2) payment form for the medical care provider. The data collected from each subdimension were analyzed by creating a grid/table for purposes of comparison. A simplified version of this grid is provided in the “Results” section of this article.

In addition to providing comparable data across jurisdictions, the template grid was used to highlight the number and range of documented policies and care practices related to medical services in NHs. Because of the wide diversity of health care systems, the collection and comparison of data across jurisdictions were, in some instances, difficult. Policies regarding medical care in NHs and similar institutions have, for instance, different objectives, scopes, and level of detail. Rather than seeing this as a weakness, we treat these differences as point of analysis in themselves: How do they differ, on what grounds and to what consequence?

Results

Norway

Government regulations and policies. In 2017, there were approximately 955 NHs in Norway, with a total of 40 494 beds, making the average size of NHs 42.¹⁷ Approximately 83% of beds were long-term, whereas 17% were short-term (including beds for rehabilitation). Total number and proportion of short-term beds have increased over the past decade. 68% of all residents were 80 years or older in 2017.¹⁷

Similar to most medical and long-term care services for the elderly, NHs are a municipal responsibility in Norway. Most NHs are publicly owned and operated, a minority are private nonprofit and relatively few are private for-profit. The municipalities are, by law, responsible for delivering “necessary medical care” for people residing within their borders,¹⁸ regardless of the NH ownership model. Municipalities therefore have a pivotal role in facilitating the way in which physicians care for NH residents. This responsibility is often delegated, at least in part, to NHs, although this occurs to a different extent for public and private NHs, in the sense that physician care for many public NHs is provided for through a central office in a municipality, whereas many private NHs can choose to be part of such schemes, or not. The actual responsibility of securing medical care for residents is, as such, a matter to be solved by the municipalities and the institutions, rather than by the respective residents (and their families) or the federal government.

Within Norway, there are no national regulations that stipulate the minimal coverage required by NH physicians (eg, minimum frequency of contact with residents), their employment “type” (eg, working directly for the NH or for the municipalities as a general practitioner), nor their reimbursement strategies. Nursing homes are, however, required by federal law to provide physician medical care to residents by having a physician’s services “connected to” all institutions.¹⁹ Although NHs are also obliged by federal law to have “procedures in place” to secure the medical care of residents,¹⁹ regulations do not specify what this entails and what being “connected to” means.

Financing systems. Norway has universal health care coverage that includes all long-term care services paid for by municipalities. Physicians who are paid by individual NHs and those who are paid by municipalities receive a fixed salary that does not depend on the number and type of patients they see, and NHs are reimbursed by the municipality for their physicians’ salary cost. Physician salary in the public sector is also highly regulated, meaning that differences in the salary level of NH- and municipal-employed physicians are in most instances minimal. Overall, therefore, the decision to have an NH- versus municipally employed physician is based on practical decisions rather than cost-efficiency.

Medical practice patterns and service models. Physicians providing medical care in NHs can (1) be employed and work for the facility directly or (2) work as general practitioners through an operation agreement with a municipality. All physicians employed as general practitioners in a municipality are required to allocate 20% of their work (7.5 hours/week) to “public duties,”²⁰ of which NHs are one of several options. Beyond these high-level guidelines, NH legislation does not mention or specify the role, function, or duties of physicians, having a form described as unspecific “framework acts.”²¹ Consequently, most NH residents do not have a specific, identifiable physician ascribed to them, nor are municipalities obliged to provide physicians in NHs at all times. Municipalities can, for example, provide medical services in emergency departments in the evenings, during the night, or on weekends.

About 50% of NH medical care in Norway is performed by physicians employed directly by the NH, whereas the remainder is provided by general practitioners employed by municipalities.²² Physicians employed directly by institutions tend to have far larger positions/full-time equivalents compared with their counterparts.¹³ This means that most NHs in Norway have physicians employed by the community, whereas only some employ full-time physicians. Also, while some evidence shows that the volume of physician care time has increased dramatically over time in Norway (from 0.27 hours of care weekly per resident in 2005 to 0.55 hours of such care in 2017),²³ others have shown that this volume of care varies considerably (ie, up to 3-fold) from one municipality to the next.²⁴

Unlike other jurisdictions, NHs in Norway typically do not have Medical Directors (ie, physicians in charge of organizing the medical care provided by others) nor do they employ equivalent providers such as PAs and NPs.

Summary

- Local/municipal responsibility;
- Potential for variation;
- General practitioners perform duty-work in NHs;
- Few specific regulations/legislation;
- No fee for service;
- *Closed model.*

The United States

Government regulations and policies. In 2016, there were 15 452 registered NHs in United States, with an average of 109 beds per facility.²⁵ About 86.5% of beds were long term, whereas 13.5% were short term; 85.5% of all residents were 65 years or older in 2014.²⁶

Medical care in US NHs is driven largely by federal laws and regulations, although all states have licensing laws. These regulations do not vary by NH ownership type (public, for-profit, or nonprofit). Most of the NHs in the United States are private for-profit. Some states have additional requirements guiding the provision of medical services beyond the federal regulations, whereas other states have the same requirements as laid out by the federal government. Physicians and other health professionals must, for instance, be licensed in each state, which is regulated by the state professional boards. The US NH legislation was passed in 1987²⁷ to strengthen federal regulatory requirements for all NHs that are certified to receive federal funds (in 2016, this represented 96% of all US NHs).²⁵ Nursing homes that do not receive federal funds (ie, take only privately paid patients) do not have to meet federal certification standards but do have to meet the minimum state licensing laws and regulations. The specificity of regulations regarding medical services has increased over time^{26,28–30} and the general regulatory guidelines have also increased.

The federal regulations for skilled nursing care require that each NH resident must have an attending physician (Section 483.30).^{29,30} The regulations state that

A physician must personally approve in writing a recommendation that an individual be admitted to a facility. Each resident must remain under the care of a physician. A physician, physician assistant, nurse practitioner, or clinical nurse specialist must provide orders for the resident's immediate care and needs.

Furthermore, it is stated that “The facility must ensure that (1) the medical care of each resident is supervised by a physician and (2) another physician must supervise the medical care of residents when their attending physician is unavailable.”

The US federal regulations require that each resident must be seen by a physician at least once every 30 days for the first

90 days after admission, and at least once every 60 days thereafter. At the option of each resident's physician, required visits in skilled nursing care facilities, after the initial visit, may alternate between personal visits by the physician and visits by a PA, NP, or CNS. The US federal regulations also require that each resident's physician or equivalent must at each visit: (1) review the resident's total program of care, including medications and treatments; (2) write, sign, and date all progress notes; and (3) sign and date all orders.

The US federal regulations also require each nursing facility to provide or arrange for the provision of physician services 24 hours a day in the case of an emergency. Physicians may delegate tasks to a PA, NP, or CNS. Finally, US federal regulations require that every facility must designate a physician to serve as Medical Director who is responsible for (1) implementing resident care policies and (2) coordinating medical care in the facility. Federal law does not specify the amount of time or payment policies for physicians and Medical Directors.

Once residents are no longer paid for by Medicare (for aged and long-term disabled beneficiaries), but are paid by Medicaid (for low-income individuals) or pay privately, their care can be provided solely by a NP where the state practice authority allows it. A total of 23 US states currently have legislated full practice authority for NPs.³¹ States may have additional licensing requirements for Medical Directors and clinicians practicing in NHs that go beyond the federal requirements. For example, California has a requirement that NH residents must be seen, at a minimum, every 30 days.

Financing systems. The state-federal Medicaid program and the federal Medicare program have separate NH program payment policies. Medicare only pays for short NH stays (ie, rehabilitation and nursing care, usually up to 100 days).¹⁵ In 2016, about 62% of residents were paid by Medicaid, 13% by Medicare, and 25% by private insurers or private individuals.²⁵

Medicaid pays for long-stay low-income residents, whereas other long stay residents with higher income levels must pay privately out of pocket. Both the Medicare and Medicaid programs pay NHs based on specified per diem rates but these rates do not include payments for medical services. Rather, the payment for medical services is made generally on a fee-for-service basis, based on the type of service provided, and payments are generally made directly to the medical provider. Medical providers who are employed by the facility may elect to have payments delegated to the NH or be paid directly. Private insurers and managed care companies also have their own payment policies for physician visits to NHs. Payment policies and rates may vary by the type of medical provider (eg, MDs, NPs, PAs, and CNSs). Some state Medicaid programs pay NPs, PAs, and CNSs directly for services, whereas other states reimburse them through physicians.

Medical practice patterns and service models. Nursing home facilities or chains of facilities may set their own policies

regarding Medical Directors and medical services as long as they meet applicable federal and state policies. Most physicians who provide NH services practice in the community and provide services to NH residents on a part-time basis. Nursing homes may directly employ physicians and other health professionals to provide medical care on a part or full-time basis and physicians may be salaried or paid on a fee-for-service basis. When a resident does not have an attending physician, the resident (or family) may ask the NH's physician or Medical Director to serve as an attending physician.

Nursing homes have the flexibility to set their own policies in terms of whether they have open or closed staff models, employment arrangements, medical staff certification, and numbers of different types of medical staff.

From 2000 to 2010, the average number of primary care physicians providing care in NHs decreased from 3.5 to 2.9 per facility, and similarly, the number of specialty physicians (eg, cardiologists) has decreased from 1.4 to 0.8.³² As the number of physicians have decreased, we could expect that the amount of time spent by physicians has also decreased, but there are no available data kept on hours spent. In contrast, the number of NP visits per bed year increased from 1 to 3 in the 2000 to 2010 time period. The wide variability of NP/PA visits per bed across states may be in part related to the state policies regarding scope of practice requirements.^{15,32} Overall, in 2010, primary care and specialist physicians made about 9 and 2.2 visits per US NH bed, respectively.

Summary

- Combination of federal and state legislation/regulation;
- Increasing regulation;
- Complex/differentiated payment schemes;
- Nursing homes have relative autonomy;
- Physicians do not have monopoly on medical care;
- *Open or closed model, depending on institution.*

British Columbia

Government regulations and policies. British Columbia has 292 publicly funded NHs (the small number of user-pay private facilities are not included), with a median size of 80 (ranged from 4 to 300). Virtually all beds are long term with the exception of a small number of hospice and respite beds. An estimated 3.6% of the population 70 years and older reside in NHs in BC. Nursing homes in BC are regulated through a combination of provincial legislation and credentialing through the regional Health Authority (for facilities owned and operated by health regions or hospitals) and the provincial physician professional regulatory body (the BC College of Physicians and Surgeons). Both legislation and regulation are at the provincial level. Several pieces of provincial legislation guide physician care in NH facilities. This legislation differs slightly depending on ownership (public versus private for-profit/nonprofit).

Legislation pertaining to nongovernmental NHs (ie, non-publicly owned) is governed by the Community Care and Assisted Living Act residential care regulation. This Act specifies that NH licensing (called residential care facilities in BC) must be done by Medical Health Officers (physicians with special training and a degree in Public Health). Legislation governing NHs owned and operated by a health authority (34% of all publicly funded beds) is regulated through a different piece of legislation—The Hospital Act. Physicians providing care in publicly owned and operated NHs (including hospital-attached facilities) must also go through a credentialing process that involves providing proof of an up-to-date license, medical malpractice insurance, and annual completion of training modules.

According to the *Residential Care Regulation* under the *Community Care and Assisted Living Act*, operators must ensure that residents are only given medication that has been prescribed or ordered by a NP or physician.³³ All facilities therefore require residents admitted to a facility to have an identified physician, who may be the same physician that a resident had when living in the community (open model) but more commonly is a physician assigned by the facility (closed model), drawn from a group of physicians whom the facility has identified as being willing to see new patients in addition to the ones already being cared for.

There is no legislated standard for the frequency of physician visits or 24/7 availability for emergencies; however, continuity of care and provision of after-hours coverage in the event of an emergency is an expectation of the College professional regulatory body that licenses physicians. There are a number of organized channels through which standards are *encouraged*. Examples of these include Accreditation Canada—an accreditation system for facilities and a new physician-run residential care improvement initiative. The latter initiative, titled, “the Residential Care Improvement Initiative,” is a provincially funded incentive program that pays physicians a bonus for providing the following: (1) proactive scheduled visits to residents, (2) attendance at a patient and family annual care conference, (3) meaningful medical reviews, and (4) 24/7 availability and attendance on-site when required. Participation in the program is voluntary; however, since its introduction in 2015, uptake by family physicians providing NH care has been growing.

Financing systems. Nursing homes' care is paid for publicly by provincial governments in Canada. Physicians are paid mainly by the provincial remuneration agency (Medical Service Payment BC), the physician is a private contractor and bills the agency for a visit and other types of services including a lower level of remuneration for indirect care through phone calls to family members and NH staff. The level of the physician's payment is therefore a function of the number of residents a physician provides care for and the frequency of the visits and other services provided to any given resident. Generally, it is rare for

a physician to only work in NHs. Most would do this for 1 or 2 days per week and then do other work the rest of the time.

Medical practice patterns and service models. Most NHs are provided with public funds to hire a part-time Medical Coordinator (usually this is a leadership role for 1-2 half days per week) and is usually (but not always) a physician who also provides care to a number of residents in the NH. The agreements with and appointment of the Medical Coordinator is through the health authority Medical Director of Residential Care and not with the NH itself.

Responsibility and accountability to the individual resident/family are covered in the Physicians and Surgeons Regulations regarding doctor/patient care. Each NH then has its own way of formalizing the relationship it has with physicians. In some cases, the NH will ask the physician to sign a “contract” agreeing to certain standards. In most of the situations, physicians are private contractors, paid on a fee-for-service basis for their services by the province and providing care to residents in a given NH based on informal or more formal agreements depending on the NH.

All community-based family physicians whose patients are to be admitted to an NH are asked to complete a 1-page form. This includes a brief summary of the patient’s medical issues, functional status, advance care directives, and whether or not the physician is willing to continue providing care to the resident.

The frequency of visits in 2013 ranged from 5.3 to 8.7 per resident per year across the province’s 5 health regions with a provincial average of 7.2 visits per year.

Summary

- Provincial governance;
- Some variation in regulation connected to ownership;
- Most physicians also work elsewhere;
- Physicians are considered private contractors;
- Medical Coordinator;
- *Open model or a combination of open and closed.*

Germany

Government regulations and policies. In 2015, there were approximately 13 600 NHs in Germany, with an average size of 63.³⁴ About 63.4% of all institutions offer only long-term care, whereas 8% offer a combination of long-term and short-term care; 18% offer short-term care exclusively, whereas 11% offer a combination of short-term and/or long-term care in combination with other services, beds only available during nighttime, for instance. 89% of all NH residents are 70 years or older.

Most of the NHs in Germany are owned by nonprofit companies (53%), whereas 42% of all NHs are private for-profit and only 5% are publicly owned.³⁴ Medical services in NHs are regulated federally by the statutory long-term care insurance (LTCI) law and the statutory health care insurance laws.^{35,36}

Nursing care medical care services in Germany are regulated by the National Associations of Statutory Health Insurance Funds (Spitzenverband der gesetzlichen Krankenkassen) and the Associations of Statutory Health Insurance Registered Doctors (Kassenärztliche Vereinigung). These associations guarantee that NHs work collaboratively with general practitioners to ensure that high-quality medical care are provided to the residents. If the medical service is not guaranteed in this way, the NHs could also employ a general practitioner at the facility (§ 119b).³⁵

Overall, these contracts should coordinate and structure the relationship between physicians and care staff to improve medical provision, for example, through coordinating care visits with physicians by specifying a contact person/physician.

After an LTCI reform, NHs have to prove (§ 114)³⁶ how they provide physician-based medical services, ie, how often physicians visit, the level of cooperation with pharmacies, etc. According to § 12 Abs. 2 SGX XI34, care insurance funds should advise NHs about a cooperation contract between general practitioners and the NHs.

Financing systems. Physicians’ services are paid for by the health care insurance fund. Payment is measured based on reported services using a fee-for-service model. The payment model has limitations and a ceiling on total amount to be “billed” and only certain types of medical services qualify for reimbursement.

The health care insurance fund is needs based, although an increasing number of services, considered “not absolutely relevant,” are not covered in it. Health care needs are mostly funded by the health care insurance system, comprising a health care system elsewhere described as a “social insurance model,” in which social insurance contributions ensure universal coverage.⁴ Still, an increasing share of health care provision is paid for privately. The NHs pays a lump sum that covers parts of the nonmedical cost.

Medical practice patterns and service models. Medical services for NH residents are considered the same as for individuals living at home, and residents can choose their physician freely.

General practitioners in private practices provide most of the medical services in NHs. The availability of general practitioners and specialists is often limited in NHs. In 2010, practitioners in private practice were responsible for 92% of the medical provision in NHs. Only one-quarter of the facilities had written contracts with general practitioners.³⁷ There is an unequal geographical distribution of physicians that results in gaps in service provision, especially in rural regions.

In an average-sized NH, approximately 25 general practitioners (in private practice) would provide medical care to its residents. It is not always certain that every resident has a general practitioner.³⁸ Availability of physicians after working hours depends on the individual physician, but is not organized. Most NHs have to call emergency medical services on a regular basis.

Summary

- Nonprofit NHs;
- Governed and financed through national health insurance;
- Fee for service with restrictions;
- Autonomy of residents is emphasized;
- General practitioners with private practice;
- *Open model*.

Manitoba

Government regulations and policies. Medical care in NHs (called personal care homes) in Manitoba is regulated by the provincial ministry (Manitoba Health, Seniors, and Active Living [MHSAL]). Manitoba has 122 licensed NHs comprising 9586 beds. Admission to an NH in Manitoba (and also across Canada) is generally “permanent” and residents are not typically reintegrated into the community, except for a small proportion of people (<1%) who receive intermittent NH care as respite for informal care providers.³⁹ Although about 16% of all NHs (and beds) are designated as for-profit in this province, this varies tremendously across Manitoba from about 40% of all NH beds in larger urban centers to no for-profit NHs located in rural and remote regions.⁴⁰ Nursing homes in Manitoba also vary tremendously in size and structure; most urban NHs are large (220+ bed) stand-alone facilities, almost half of all rural NHs are juxtaposed to a hospital and 43% of rural NHs have fewer than 30 beds.⁴⁰ Overall, almost 60% of all NH residents in Manitoba are 85+ years old, and women 85+ years old comprise 47% of all NH days.⁴¹

The Continuing Care Branch of MHSAL ensures compliance with the provincial NH standards and oversees the annual licensing of all registered NHs in Manitoba.⁴² Greater details about these standards, including how they are applied and interpreted, are provided elsewhere.² As part of the provincial NH standards, each NH in Manitoba is required to have a Medical Director who must be a licensed and practicing physician. Medical Directors are responsible for coordinating the physician care in each NH; a physician must also be available to examine each resident as often as the resident’s condition requires, and all staff and residents must have access to a physician 24 hours per day and 7 days per week to provide emergency care and consultation as required.⁴³ Additional legislation exists between MHSAL and Doctors Manitoba (the voluntary provincial physician membership body) outlining NH physician responsibilities to provide telephone or personal coverage to NH residents during after-hours (from 5 PM to 8 AM).⁴⁴

Financing systems. Most physicians in Manitoba, including those providing care in NHs, are remunerated using the fee-for-service method (ie, where the physician bills the province directly for each care episode). Although these fees are highly standardized by the type of care provided, physicians are

permitted to charge a larger fee when caring for patients who have complex chronic and multimorbidity needs. As most NH residents have complex and chronic needs, physicians in Manitoba are generally instructed to bill each routine visit (eg, to examine, assess, or evaluate the resident’s condition and give advice as necessary to the resident and/or the nursing staff concerning care management) using this chronic care fee.⁴⁵ In addition, while most community-based physicians are required to cover their clinical overhead costs from these fees, NHs do not charge physicians any overhead costs. In addition to being eligible to submit fee-for-service claims, after-hours on-call physicians receive an additional form of reimbursement. To help provide this additional payment, the province of Manitoba provides each health region with an annual stipend of US \$119 per licensed NH bed or US \$11922 per facility (whichever amount is greater). This amount is divided quarterly across on-call physicians according to the volume of after-hour care they provide.⁴⁴

Medical practice patterns and service models. Almost all NH physicians in Manitoba also practice independently in the community and provide NH care on a part-time basis. Most NH physicians in Manitoba are general practitioners (also called primary care physicians). Although not required, a small percentage of these providers have a *Care of the Elderly* certification offered by the College of Family Physicians of Canada, the accreditation body for family physicians in Canada.⁴⁶ Only a small number of NPs provide NH care. Although these are salaried positions, the NP contract with MHSAL does not include “after-hours” care, meaning that each NP must work with a physician who is willing to provide this type of care. There are no other types of physician-equivalent NH providers in Manitoba. Although this province does have a small number of geriatricians, most work in day hospitals and/or as a resource (eg, via the Geriatric Program Assessment Team) to acute care hospitals and to NH physicians who request help with complex cases.

Physician care in Manitoba NHs is usually confined to chronic disease management and/or to acute care matters when residents experience exacerbations of their chronic diseases.⁴⁷ In addition, most physicians usually participate in weekly rounds with nursing teams and, in consultations with a nurse and pharmacist, conduct a quarterly medication review for each resident and deal with medication changes as required. Although physicians usually do not participate in additional team (eg, end-of-shift) meetings, they are required to document each resident consultation as part of a common (ie, shared by all providers) and standard charting strategy. As a rule, physicians also do not participate in resident/family care conferences. Family members can, however, arrange to meet with physicians, usually when physicians are on-site conducting resident rounds. Finally, while legislation in Manitoba does not stipulate any minimal amount of physician care required per

Table 1. Government regulations and public policies for medical services in NHs.

	LEVEL AND TYPE	LEVEL OF DETAIL	NHS COVERED
Norway	Federal authority allocates responsibility and oversight to local municipalities	Unspecified/framework act/interpretive	All NHs
Germany	Federal authority allocates responsibilities to district jurisdictions	Unspecified/interpretive	All NHs with public funding (provision contracts)
US	Federal regulations and state licensing regulations	Specified (for instance, type and frequency of visits and documentation)/prescriptive. Requirements have increased over time	All NHs who receive federal funds (96%). State regulations cover all other NHs
Manitoba	Provincial	Provincial standards ensure that each resident's medical care is supervised by a physician, that residents are seen by a physician as often as their condition requires, and that both professional NH staff and residents have access to a physician for advice and input 24 h a day	All licensed NHs
British Columbia	Provincial	General standard that a resident needs to be attached to an MD to be admitted to an NH. Some variation in credentialing of MDs who work in private (contracted nonprofit and for-profit vs public facilities)	All licensed NHs

Abbreviations: MDs, Medical Directors; NHs, nursing homes.

resident, evidence shows that 81% of NH residents in Manitoba are visited by physicians at least 10 times annually.⁴⁸

Summary

- Provincial governance;
- Considerable internal variation, for instance, regarding NH size;
- “After-hours” medical care covered by regulation;
- Mostly part-time NH physicians;
- Medical Director;
- *Open model*.

Comparative analysis

Variations in government regulations and public policies

Government regulations and policies pertaining to the function and role of medical care at NH vary considerably across the included jurisdictions (Table 1). The government regulations are in place at different levels of governance, local/municipal, regional/state/province, or national/federal, more often than not, in combination. In Norway, policies are established at the municipal level, whereas in Germany, policies are established at the district and federal level. The BC and Manitoba policies are at the provincial level, whereas the United States establishes its policies primarily at the federal level. Who controls the procurement and practices of medical care and what governance implies therefore varies across jurisdictions.

Perhaps more importantly in this context, the regulations specifically targeted at medical services in NHs have different overall foci; they are, in short, differently formed especially

regarding level of detail (Table 1). Some, Norway, for instance, can be described as framework acts, whereas others, the United States in particular, are far more detailed. The United States (and to a lesser extent Manitoba and BC) has the most detailed legislation requiring that all residents should have an attending physician. In the United States, the attending physician is, furthermore, required to formally admit residents to the institution, provide continuous care, and document the medical health development of the resident. If physicians are not available, NH institutions are obliged to provide a substitute. In Norway, meanwhile, these different responsibilities are framed within a rather vague definition of having a physician connected to an institution. Furthermore, some regulations in the United States may vary by payment program, but all NHs must meet minimum state laws and regulations. This variation in the level of detail in regulation can, as such, lead to internal variation as well as cross-jurisdictional variation. Finally, how regulations are audited, or, in other words, the accountability for securing adequate medical services, varies greatly.

Variations in financing systems

Norway, Manitoba, and BC have government payment for medical services in NHs, whereas Germany has a social insurance system that uses multiple insurance payers (which is salary based and covers almost the entire population). The United States has a multiple payer system, primarily public but also some paid by private health insurance companies.

In Norway, physicians receive a fixed salary to provide medical services, whether directly from the municipalities or from the NH. In Germany, social insurance, especially the health

care insurance fund, pays a clearly regulated and specified fee for service to physicians. Manitoba and BC have fee-for-service payment based on fixed fees agreed on by the province and the respective professional voluntary physician associations (VPAs). The United States pays physicians primarily on a fee-for-service basis with the fees set separately by each payer. State Medicaid program fees vary widely. In the United States, the fee rates also vary by provider type where physicians are paid higher fees than alternative care providers. Only a few NHs pay salaries to medical care providers.

In summary, each jurisdiction has its own unique regulations and financing system, representing a unique way in which medical services at NHs are facilitated and shaped. But how is it shaped? What consequences can the variations in regulation and policies entail for medical/physician services in NHs?

Variations in medical care practices and service models

The differences in form and level of detail of legislation and regulations, to whom they are addressed, and the financing systems, all appear to have significant consequences for the role of medical care providers (most often physicians) in NHs (see Table 2). How physicians and other medical care providers are “connected to” an NH, as a more or less autonomous agent, varies. Elsewhere, this has been described as the extent to which NHs can control physician resources³² and appear to vary considerably among jurisdictions.

Physicians have, for instance, different forms of relationships with NHs across different jurisdictions: a salaried position at, and therefore answerable to, an NH institution, a governing body allocating physicians’ services to institutions, or with individual residents. Physicians can, in other words, be a part of the operation of an institution or independent of it, the latter often as general practitioners “following” a patient from one setting (the home) to the next (the institution).

In cases where a physician has an individual and autonomous responsibility for a resident/patient, as in the case of general practitioners “following” a patient when moving to an NH institution, physicians can be paid for the specific services they perform, a visitation, for instance—an amount which can or cannot be itself regulated—paid by an outside agent (a provincial or federal institution, for instance). Such an arrangement stands in opposition to being paid an hourly rate, or an amount relative to a portion of a full-time equivalent, paid by or through the NH institution. Although the former arrangement may have advantages in terms of physicians being able to follow patients from “cradle to grave,” there is a trade-off whereby such an arrangement tends to discourage physicians from becoming part of the NH provider team as evidenced by previous work looking at “open models.”

Related and perhaps consequential to the relationship that physicians have with NHs, “size of position” (full-time equivalents) for physician engagement with NHs can and do vary

considerably; from full-time to smaller, part-time positions, often in combination with primary employment or independent practice elsewhere, to employment relationships only measured (and reimbursed) by the hour.

There also appears to be variations among jurisdictions in terms of accountability (see also *Doctorsmanitoba*⁴⁵). The overall “schemes” of accountability vary considerably among jurisdictions, as does the role of the physician within these schemes—some are directly involved, some are indirectly involved, and some are involved only through a “Medical Director.”

In summary, regulations and guidelines for physician medical care in NHs vary within and among jurisdictions and influences (1) physician accessibility and (2) how physicians engage with NHs in different ways in the relevant jurisdiction. Given the significance of physician medical care in NHs, such a variation can be interpreted as disquieting.

Discussion

This study has shown that medical care service in NHs varies widely across jurisdictions in terms of government regulations and policies. These variations are far greater than regulations and policies regarding nursing care⁴⁹ and, consequently, can lead to wider variations in practice patterns for medical/physician care compared with nursing care.

Although it is problematic to generalize based on the limitations of our data, some general tendencies can be outlined. The level (both number of and how specific they are) of regulations seems to be connected to payment schemes for the medical care providers: jurisdictions with more regulation tend to employ a fee-for-service scheme, whereas jurisdictions with fewer regulations tend to have more salaried positions. Furthermore, jurisdictions with more regulation and fee for service tend to have open staffing models, whereas jurisdictions with less regulation and salaried positions tend to have closed staffing models. As such, 2 general models (to be understood as analytical models, rather than models completely overlapping with one or more of the included jurisdiction) can be outlined: (1) more regulations—fee for service—open staffing models and (2) less regulation—salaried positions—closed staffing models. Of interest, and in need of further research, our evidence seems to suggest that these models can produce different forms of medical care/patient interaction. Model 1 seems to lead to less available medical care provision and to medical care provision being less integrated into the overall care services provided at NHs. Given the aim and scope of this article, we do not have data to draw conclusions about these tendencies but would rather outline some areas in need of further research regarding (1) ownership and (2) continuity of care.

First, a considerable difference is found among jurisdictions regarding specificity and scope of regulations, in which the United States and Norway can be described as opposing outliers. We have seen that the number and level of detail in regulations have increased in the United States, whereas similar

Table 2. Medical care practices and models and financing systems for medical services in nursing homes.

MEDICAL CARE PRACTICES AND SERVICE MODELS					FINANCING SYSTEMS			
TYPE OF PROVIDERS	PHYSICIAN LEADERSHIP	TYPE OF EMPLOYMENT	DISTRIBUTION OF PROVIDERS	STAFFING MODEL	AMOUNT AND TYPE OF SERVICES	PAYMENT SCHEMES	FIXED OR FEE-FOR-SERVICE PAYMENT	
Norway	Physicians or GPs	No direct leadership at institutions	Institutional or municipal employment arrangement	Half employed by institutions and half by municipalities	Closed	0.49 (physician hour per resident per week)	Municipal payment, no payment from resident	Fixed salaries
Germany	GPs in private practices	None—most physicians independent from institutions	Individual: residents chose physicians independently NHS can have cooperation contract with physicians	Predominantly GPs in private practice (92%)	Open/ physicians are not perceived as part of the NH staff	Uncertain. Large variation, especially regarding geography	Social insurance (salary based, copayed by employee and employer)	Fee for service
US	GPs, PCPs, MD specialists, NPs, CNS, PAs. Must have Med Dir oversight	Medical Director	Primarily individual self-employed primary care providers and some NH salaried providers	Predominantly primary care physicians with a few full-time or part-time salaried MDs. Increased use of NPs, CNSs, PAs	Open or closed depending on nursing home policy	On average 11 visits per year (including NPs, PAs, and CNSs)	Medicare (Part B) or Medicaid if eligible, and/or private health insurance payments	Primarily fee for service (some salaries)
Manitoba	Almost entirely MDs with a small number of NPs (who cannot deliver after-hours care)	Medical Director	Institutional or individual (self-employed primary physicians)	Family practitioners with part-time NH positions	Open	No standards but 81% of residents have at least 10 visits annually	Physicians are paid a standard amount agreed on by the provincial ministry and physician bargaining association	Fee for service
British Columbia	MD medical coordinator	Medical coordinator	Institutional or individual (self-employed PP)	Predominantly private, mostly as part-time	Open or combination	No regulation except to require “regular visits”	Physicians are mainly paid by the provincial remuneration agency based on an amount agreed on by the provincial ministry of health and the VPA	Fee for service with additional voluntary incentive program to deliver a defined standards of care

Abbreviations: CNSs, clinical nurse specialists; GP, general practitioner; NH, nursing home; NPs, nurse practitioners; PAs, physician assistants; VPA, voluntary physician association.

developments have not occurred in Norway. Other included jurisdictions seem to have opted for a “middle-ground” between these 2 extremes. Another significant difference between the United States and Norway, not thoroughly discussed in this article, is provider ownership: most of the NHs in the United States are private (most of these again are private for-profit), whereas most of the NHs in Norway are public. Interestingly, the other included jurisdictions have a more even, although internally different, distribution of ownership patterns. The difference among jurisdictions regarding (1) specificity and scope of regulations and (2) ownership patterns seems, in other words, to be similar. As such, the differences outlined in the 2 suggested models can be related to patterns of ownership. The role and significance of ownership are, at any rate, significant, and should be pursued by researchers specifically regarding implications for regulating long-term care services and other health care services.⁴⁹

Second, a considerable difference found in this article is how, as a consequence of the discussed regulations and policies, medical care providers appear to be differently “associated” with other care professionals. The extremes can be described as, on one hand, an autonomous agent visiting a patient with no connection to the care institution, and, on the other hand, a medical care provider employed by the institution as an NH “house physician.” What, again, do these differences imply for the quality of care for NH residents? An obvious implication is that the latter “arrangement” will lead to continuity of medical care as physicians and other medical care providers will have larger positions (or full-time equivalents) directly connected to an NH and therefore, one would assume, spend more time there. This can, again, contribute to several factors associated with increased quality of medical care in general, such as having fewer physicians in total at an institution,^{6,50,51} having more “timely attendance” in the event of a medical emergency,^{50,51} and generally an increased “commitment” to an institution.^{3,14} As such, we argue that the service models discussed can significantly influence continuity of medical care in NHs. This is significant not only for the quality of care between physicians and residents but also for the level of familiarity between physicians and (other) staff at NHs and between physicians and next of kin.^{9,13}

In summary, available research literature indicates that availability of physicians influences quality of NH care,^{6,9-12,50,51} in addition to having impact on collaboration and interaction between physicians and other agents,^{3,9,13,14} again potentially influencing quality of care. Still, research addressing how medical care provision, in its various forms, related to quality of care for NH residents, resembles a map with many gray areas. Because of the scope of this research article, including analyses of several jurisdictions and a wide array of regulations and guidelines, we do not have sufficient data to draw conclusions about the implications for quality of medical care within the respective jurisdictions. Still we have found considerable differences and important implications for medical care provider engagement at NHs in

general, implications that resonate with the available research literature. Our study also points to some areas in need of further research. We recognize the need for routinely collected sets of data in understanding models of medical care and evaluating their effects on quality of care. Furthermore, patterns of ownership in the NH sector and the relationship to regulation of medical care and models of medical care appear as equally significant and understudied. Finally, how regulation/legislation affects continuity of medical care has been a major focus in this article and should be pursued further by researchers, addressing effects on quality of care for NH residents in a more detailed manner than achieved through this article.

Conclusions

In conclusion, the observed forms of regulation and policies do seem to affect the role and function of physicians in NHs in the included jurisdictions, especially related to whether or not a medical care provider operates as a more or less autonomous caregiver toward a patient (who happens to reside in an NH), or whether the physician is an ingrained part of the medical services provided at an NH. However, because of considerable internal variation, as seen, drawing conclusions about the respective merits of the different systems is challenging: promising and less promising aspects seem present in most, if not all, jurisdictions. In contrast to regulations and policies guiding service provision for registered nurses and other nursing groups, physician medical care at NHs is largely unregulated, and where regulations exist, they are vastly different.

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Author Contributions

All authors contributed to the design of the research, to the data collection, to the analysis of the results and to the writing of the manuscript.

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