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RESEARCH ARTICLE

REVISED Recommendations from long-term care reports, commissions, and inquiries in Canada [version 3; peer review: 2 approved, 1 approved with reservations]

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Abstract

Background: Multiple long-term care (LTC) reports have issued similar recommendations for improvement across Canadian LTC homes. Our primary objective was to identify the most common recommendations made over the past 10 years. Our secondary objective was to estimate the total cost of studying LTC issues repeatedly from 1998 to 2020.

Methods: The qualitative and cost analyses were conducted in Canada from July to October 2020. Using a list of reports, inquiries and commissions from The Royal Society of Canada Working Group on Long-Term Care, we coded recurrent recommendations in LTC reports. We contacted the sponsoring organizations for a cost estimate, including direct and indirect costs. All costs were adjusted to 2020 Canadian dollar values.

Results: Of the 80 Canadian LTC reports spanning the years of 1998 to 2020, 24 (30%) were based on a national level and 56 (70%) were focused on provinces or municipalities. Report length ranged from 4 to 1491 pages and the median number of contributors was 14 (interquartile range, IQR, 5–26) per report. The most common recommendation was to increase funding to LTC to improve staffing, direct care and capacity (67% of reports). A median of 8 (IQR 3.25–18) recommendations were made per report. The total cost for all 80 reports was estimated to be \$23,626,442.78.

Conclusions: Problems in Canadian LTC homes and their solutions have been known for decades. Despite this, governments and non-governmental agencies continue to produce more reports at a monetary and societal cost to Canadians.

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Any reports and responses or comments on the article can be found at the end of the article.

Keywords

long-term care, nursing home, older adults, health policy, research waste, Canada, commissions, inquiries, cost analysis, quantitative analysis, COVID-19

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REVISED Amendments from Version 2

Revised in response to peer reviewers' comments. Changes:

1. Methods > Estimation of report cost: Edited sentences regarding direct and indirect costs to better reflect the definition of these two values.
2. Methods > Estimation of report cost: Added sentence indicating that we assumed all reports by the organization in the year of publication were equal in cost when true cost was not available.
3. Results > Table 2: Added caption to clarify what is meant by responsive behaviours.
4. Discussion > Added sentence that gives context about the use of military personnel in LTC during the COVID pandemic in Canada. .

Any further responses from the reviewers can be found at the end of the article

Introduction

The COVID-19 pandemic led to a high proportion of deaths in Canadian long-term care homes (LTCH) compared with those of other developed countries. The proportion of deaths from COVID-19 in LTCH in Canada was 81% compared with a mean of 42% in other Organisation for Economic Cooperation and Development (OECD) countries in the initial months of the pandemic¹. This statistic is surprising since Canada is considered to have a relatively low number of COVID-19 deaths overall². The difference in mortality rate was attributed to pandemic preparedness, integration of services (LTCH, public health and hospitals), funding and resources, daily care hours for residents, and comprehensiveness of inspections³.

During the early months of COVID-19, the media reported a shortage of direct care providers and personal protective equipment (PPE) in Canadian LTCHs, which led to residents suffering from a lack of basic personal care and delays in identifying medical problems⁴. Reduced staffing levels and wage compression in Canada's LTC sector compelled individuals to work at more than one facility to make a living wage. Working at multiple nursing homes contributed to the spread of COVID-19 infection⁵, and although restricting employment to one facility reduced the number of outbreaks, it also exacerbated pre-existing work force shortages⁶. Furthermore, lower staffing levels and direct care hours are associated with increased rates of infection and hospital admission among residents⁷, with this same trend observed in LTCHs with COVID-19 outbreaks^{3,5,8}.

In April, the Royal Society of Canada Working Group on Long-Term Care was tasked with reviewing the current state of LTC in the face of COVID-19⁹. Their report found 103 LTC reports, commissions, and inquiries, 80 of which were unique reports based in Canada. The review found recurrent themes of longstanding deficiencies in the LTC sector that contributed to the magnitude of the COVID-19 crisis in LTCHs. Despite the wealth of evidence, policy changes were not made. Instead, new LTC commissions and inquiries are being held in response to the pandemic, only to find the same problems already known from past reports¹⁰⁻¹². Given the number of reports in the past, it would be helpful to know which recommendations were

made recurrently. Furthermore, the cost of studying LTC using reports, commissions and inquiries in Canada is also not known.

The primary objective of this study was to examine the recurring recommendations over the past 10 years. Our secondary objective was to calculate the total costs of generating all of the LTC reports, commissions, and inquiries in Canada from 1998 to 2020. We aimed to put the cost of repeatedly studying the same problems into context of the current pandemic.

Methods

Quantitative analyses were based on Canadian LTC reports and commissions identified from The Royal Society of Canada Working Group on Long-Term Care⁹, which was done using an environmental scan from 1998 to 2020, a hand search of the report citations and the identification of reports during communication with the affiliated organizations. Online resources including Google Scholar, government, professional regulatory organizations, unions, and association websites were searched using terms such as "long-term care", "nursing home", "residential care", "report", "commission", "recommendation", and "inquiry". The reports were sponsored by various governmental and nongovernmental organizations and authored by researchers in the field. Even though the reports are not peer-reviewed, the Royal Society working group reviewed the reports and found them to be an accurate reflection of the state of LTC⁹.

Our analysis took place from July to October 2020. Recommendations were identified from reports published in the past 10 years to increase relevance to current practice. We only counted recommendations that were specifically stated, either in a heading, in a list, or in a "recommendations" section of the report. After the first five reports were reviewed by two reviewers, a discussion was held to decide on grouping of the recommendations. The same two reviewers regularly discussed the recommendation categories through the review process. Recommendation categories were chosen to reflect meaningful differences in concept. For example, even though improving staffing was a common theme, we separated out the recommendations into (i) increasing funding for more staff, (ii) improving staff education and training, (iii) optimizing the mix of staff professions, and (iv) increasing emotional and wellness supports for staff. For the cost analysis, we excluded follow-up reports and included cost estimates in the original larger report.

An earlier version of this article can be found on medRxiv (DOI: <https://doi.org/10.1101/2020.11.17.20233114>).

Estimation of report cost

We contacted the author or sponsoring organizations of the 80 Canadian LTC reports to inquire about the estimated cost of producing each report. Using a standardized email or script for telephone calls, we requested both direct and indirect costs. Direct costs included time donated from authors who volunteered their time to produce the report, consultancy fees, salaries, compensation for expert witnesses, graphics, layout, printing, and dissemination. Indirect costs included administrative costs and

overhead. In some cases, multiple conversations with the sponsoring organization were required to gather all of the pertinent details. When an estimated budget was not available, we searched online for global budget reports from the sponsoring organization. Total annual expenses for research, advocacy, or reports were divided by the number of reports published that year by the organization to generate an estimated cost. This calculation assumed that all reports by the organization in that year were equal in cost. We also searched for media reports about costs of commissions or coroner's inquests. If no costs were available, the estimate was based on length, depth of research, inclusion of external experts/witnesses, and the reported cost of similar LTC reports. Costs were in Canadian dollars and adjusted to 2020 values according to the Bank of Canada Inflation Calculator¹³.

Data extraction and analysis

Report characteristics were extracted, including title, sponsoring organization, publication year, geographic region, scope of report, number of contributors, number of pages, and duration of the project. The sponsoring organization was defined as the group funding the report. The geographic region of the report was categorized into national, provincial, or municipal jurisdictions. We extracted the specific province or municipality. The report scope was categorized into one of the following: health system, care of older adults, continuing care (home care, assisted living, and LTC) and LTC only. The number of contributors was the total of unique authors, researchers, panel members, witnesses, and consultants, depending on the report type. The project duration was defined as the period from the date of project initiation to report completion. Data extraction and content analysis was completed by EW and TT. Accuracy of the characteristics was reviewed by both investigators and agreement on the content analysis were confirmed by discussion. Descriptive statistics including cost data were presented as means (standard deviation), median (interquartile range), and proportion, as appropriate. The primary outcome was recurrent

recommendations. Secondary outcomes included contributors, total costs of producing the reports and median page count.

Ethics approval

No ethics approval was required for this analysis.

Results

The list of Canadian LTC reports from the Royal Society commission spans the years 1998 to 2020 (n=80). There was an increase in the number of reports over time, with 10 reports in the first half of 2020 (Figure 1). Most of the reports were focused at a provincial level (n=55, 68.8%), 24 reports were based on a national level (30.0%). We found one municipal report and no reports from the territories. Ontario (n=31, 55.0%) produced the majority of the provincial reports, followed by British Columbia (n=11, 19.6%) (Table 1). More reports were funded by provincial governments (n=26) compared with the federal government (n=9). Non-profit organizations (e.g. Canadian Association for Long Term Care, Canadian Institute of Health Information) and professional unions (e.g. Canadian Federation of Nurses Unions, Canadian Union of Public Employees) or associations (e.g. Registered Nurses' Association of Ontario, Canadian Medical Association) authored the remaining 45 reports. No reports were funded by the private sector. Most of the reports focused solely on LTC (68.8%), but some reports focused on continuing care, older adults, or the health care system as well. The median report length was 40 pages (interquartile range, IQR, 21–84), with 16 reports (20.0%) over 100 pages. The median number of contributors, including authors, witnesses, and consultants, was 14 (IQR 5–26).

Common recommendations in reports

Reviewing the reports from the last 10 years (n=48), we identified a median of 8 (IQR 3.25–18) recommendations per report. Numerous recommendations were repeated in these reports, and similar recommendations were made before and after the

Figure 1. The number of Canadian reports with long-term care (LTC) recommendations over the span of 1998–2020.

Table 1. Report characteristics for 80 long-term care (LTC) reports in Canada from 1998–2020. The year of publication, geographic focus, funding organization, scope (topics covered), page count and number of contributors were extracted for each report. Costs were adjusted to 2020 Canadian dollar values. IQR, interquartile range.

Characteristic	Value	
Year of publication, n (%)		
2010–2020	32	(40.0)
<2010	48	(60.0)
Geographic focus of report, n (%)		
National	24	(30.0)
Ontario	31	(38.7)
British Columbia	11	(13.7)
Alberta	4	(5.0)
Manitoba	2	(2.5)
New Brunswick	2	(2.5)
Nova Scotia	2	(2.5)
Quebec	2	(2.5)
Prince Edward Island	1	(1.3)
Saskatchewan	1	(1.3)
Funding organization*, number of reports (\$ spent)		
Federal government	9	\$4,461,570.04
Provincial government	26	\$18,270,601.07
National non-profit	13	\$389,067.54
Provincial non-profit	6	\$138,651.74
Professional association	20	\$196,888.44
Professional union	11	\$169,663.95
Research network	1	\$67,753.00
Private sector	0	\$0
Total cost (80 reports)		\$23,626,442.78
Scope of report, n (%)		
Health system	7	(8.7)
Older adults in general	10	(12.5)
Continuing care (home care, assisted living, and LTC)	8	(10.0)
LTC only	55	(68.8)
Page count, median (IQR)	40 (20.8–84.2)	
Number of contributors for report, including witnesses and consultants, median (IQR)	14 (5–26)	

*Some reports had more than 1 funding organization.

COVID-19 pandemic (Table 2). Overall, the most frequent recommendations were: (i) to increase or redistribute funding to improve staffing, direct care, and capacity (66.7%), (ii) to standardize, regulate and audit LTC quality of care (58.3%), and (iii) to standardize, regulate or reform education and training for LTC staff (52%). Improving staff education and training, increasing behavioural supports, and modernizing infection control measures were universally recommended in reports by governments, non-profits, professional association and unions.

Government-authored reports (n=35) focused on improving data collection (n=8, 22.9%), improving education and training

of staff (n=8, 22.9%) and standardizing LTC quality of care (n=8, 22.9%). Professional union reports (n=11) focused on regulating for-profit LTCHs (n=4, 36.4%) and standardizing LTC quality of care (n=4, 36.4%). The most common recommendation made by non-profits (n=19) was to improve training and education for staff (n=9, 47.4%). Professional association reports (n=20) most commonly recommended standardizing staffing mix (n=10, 50.0%) and increasing funding for direct care (n=10, 50.0%). The least common recommendation made by professional associations was for improved transparency, reporting and tracking of critical incidents (n=1, 5.0%).

Table 2. Recurrent recommendations in long-term care (LTC) reports in the years 2010-2020 (n=48). Reports 1–10 are from after the COVID-19 pandemic and 11–48 are from before the pandemic. The full list of reports is available in *Extended data*, Supplementary Tables 1 and 2¹⁴.

Recommendation	Number of reports (%)	Reports (see supplementary table 1 for list)
Funding: Increase or redistribute funding to improve staffing, direct care, and capacity	32 (66.7)	1, 2, 6-12, 16, 17, 19, 21-24, 26-29, 31, 32, 34, 37, 40-44, 46-48
LTC quality of care: Standardize, regulate or audit LTC quality of care	28 (58.3)	1, 2, 9-12, 14, 17, 18, 20-23, 26, 27, 29, 30, 34, 35, 39, 40, 42-44, 45-48
Education and training: Standardize, regulate or reform education and training for LTC staff, contractors, or agency staff	25 (52.1)	2, 8, 10-12, 17, 19-21, 23, 24, 26, 28, 29, 32, 34, 37, 39, 41-44, 46-48
Staffing mix: Standardize, regulate or reform staffing mix in LTC	23 (47.9)	2, 7, 8, 12, 15, 16, 18, 19, 21, 23, 24, 26, 28, 29, 31, 34, 37, 39-41, 44, 46, 48
Data driven: Collect, standardized, or use data or evidence to improve LTC	22 (45.8)	1, 7, 9, 11, 12, 18, 19, 21, 23, 24, 27, 29, 30, 35, 37, 38-40, 42, 43, 46, 47
Staff support: Increase resources or funding for LTC staff emotional support, enhancement of well being, supporting tuition/training, supporting staff family/dependents.	16 (33.3)	2, 8, 11, 12, 16, 19, 20, 21, 23, 24, 26, 34, 37, 43, 44, 47
Behaviours: Increase support, staffing, resources, or training for patients with responsive behaviours*	15 (31.3)	7, 8, 11, 12, 17, 26, 28, 32, 37, 42, 43, 46-48
Federal involvement: Standardize, regulate, or increase funding from the federal level	11 (22.9)	2, 6, 11, 12, 21, 23, 27, 30, 34, 40, 47
For-profit homes: Regulate, reduce, or reform for-profit LTC homes	11 (22.9)	1, 2, 9, 20-22, 34, 40, 46-48
Critical incidents: Report, track, or improve transparency about critical incidents in LTC	9 (18.8)	5, 11, 14, 21, 28, 32, 35, 43, 46
Commission: Appointment of a commission, task force, committee or inquiry	9 (18.8)	6, 11, 15, 31, 34, 40, 41, 43, 46,
Infection control: National standard for LTC infection control protocol, PPE, or staffing/visitor policies during outbreaks	5 (10.4)	2, 6, 10, 14, 46

*Responsive behaviours refer to actions, words or gestures that patients with dementia express in response to internal or external stimuli. Some examples of responsive behaviours include agitation, aggression, wandering, vocalization, etc.

Critical incidents received the most attention from governments (n=6, 17.1%), followed by non-profit organizations (n=2, 10.5%) and a professional association (n=1, 5.0%). Recommendations regarding quality of care or data utilization were more likely to be made by government (n=18, 51.4%) or professional associations and unions (n=20, 64.5%) than by non-profits (n=3, 15.8%). Staff wellness support was most recommended by non-profits (n=7, 36.8%), followed by professional associations or unions (n=6, 19.4%), then government (n=3, 8.6%). The appointment of commissions or inquiries was mostly recommended by professional associations or unions (n=7, 22.6%) then by government (n=2, 5.7%) and no commissions were recommended by non-profit organizations

Although recommendations to improve resident quality of life were mentioned in 12 reports, they mostly overlapped with other recommendations such as increasing direct care, optimizing staff mix, increasing quality of life data collection, and improving quality of care. Only one report discussed specific recommendations to improve quality of life, such as increasing

decision-making capacity (e.g. choice over when to bath), improving privacy with single rooms, and prioritizing relational care over medical tasks and interventions¹⁵.

The full list of reports is available in *Extended data*, Supplementary Table 1¹⁴

Cost of reports

Nearly half of the reports (45%) had cost estimates by the sponsoring organization or by publicly available budget or media reports. The total cost for all 80 reports was estimated to be \$23,626,442.78 in Canadian dollars inflated to 2020 values (Table 1). The median cost per report was \$15,203.48 (IQR \$10,000–\$53,147.81). Details of each report's cost estimate are shown in *Extended data*, Supplementary Table 2¹⁴. The lowest cost was estimated at \$500 for each of the Canadian Army Joint Task Force reports, which accounts for the administrative costs of writing the reports even if the services were provided on military order⁴. If the cost of military deployment was included, the total cost would increase by

\$53 million¹⁶. The highest cost was \$9,046,255.51 for the Public Inquiry into the Safety and Security of Residents in the Long-Term Care Homes System (The Wettlaufer Report) in 2019, which involved 79 contributors, witnesses, and experts¹⁷.

Discussion

This analysis highlights the efforts of multiple organizations, both governmental and non-governmental, to address the longstanding challenges and quality issues in Canada's LTCHs. The Royal Society Briefing Report concluded that the unresolved issues in Canada's nursing homes have been known for decades. According to our analysis, there are numerous recommendations backed by governmental and nongovernmental groups, yet little action has followed. This inaction set the stage for increased deaths during COVID-19 pandemic and to lower quality of life in LTCHs. Our analysis further showed the substantial cost of studying the problem repeatedly over the years.

Duplicate investigation of known findings reduces value and increases waste¹⁸. From the LTC reports, issues regarding understaffing, undertraining, and the negative impact of for-profit LTC homes were repeatedly mentioned⁹. Policy change often requires persistence¹⁹, but the cost of advocating for change should be viewed from a societal context (financial and moral). Commissions and inquiries into LTC issues, like those happening or slated to begin around the country^{10–12}, can solidify our determination for policy change, but do not replace the need for policy implementation. Only action will help LTC residents.

Several provinces have increased wages and provided full-time employment with more appropriate compensation and benefits to stabilize the LTC workforce²⁰. The Ontario government went further to commit 4.00 hours per day of direct care for each LTC resident by 2024²¹, bringing the total care hours above the national average (3.30 hours)²². However, increasing direct care hours, while essential, is only one of the many recommendations from existing reports. Identifying the right staff mix and care team composition, providing proper education and training, and supporting staff wellness are also critical to developing a long-term workforce that has sufficient resilience to confront future crises²³. Furthermore, we should focus more attention on resident quality of life, which should be the ultimate goal of our efforts.

Although the total cost of \$23 million in generating LTC reports may seem insignificant compared to a government budget, it represents a substantial, lost opportunity to continually improve Canadian LTCHs. Studying the same problems repeatedly means Canadian experts are confined to revisiting critical deficiencies in LTC instead of innovating new care models. Even if there were incremental lessons and improvements from these reports, they were inadequate in preventing one crisis after another. While Canada ranks among the best countries in the world for health innovation²⁴, this pandemic highlighted a contrasting story of neglected policy in LTC²⁵.

There are several strengths of this study. We systematically tracked down the cost of each report by contacting the sponsoring organization or consulting their global budgets. The

total costs, including time donated of experts authoring these reports, were accounted for. For reports that did not have available cost data, we estimated the total cost by using reports with known costs with similar length and depth.

The main limitation of this study was the lack of true cost estimates for half of the LTC reports. Some organizations lacked transparency about costing, and others lacked detailed accounting of spending. Staff turnover and record keeping practices were barriers to accessing data, particularly for the reports produced over 10 years ago. For government agencies, we often had to call multiple departments and speak with numerous representatives and noted considerable variation in the level of disclosure. For the two military reports during COVID-19, we likely underestimated the cost since they were generated as part of military duty. The Canadian government deployed military personnel to some nursing homes due to critical shortages of staffing and resources when the pandemic started¹⁶. However, there were still considerable costs incurred by the public by having the military deployed to those LTCHs²⁶. We also grouped reports on health system improvement and care of older adults in general in this analysis because LTC is intricately tied to the health system at large. Leaders in the care of older adults, such as Denmark, design LTC policy as an integral part of their health system²⁷.

Conclusion

Over the last two decades, Canadian governments and non-government organizations have repeatedly investigated longstanding LTC issues and have largely drawn the same conclusions. Had the recurring recommendations been implemented, we would not only have improved working conditions, quality of care and quality of life, but would also have undoubtedly prevented unnecessary deaths due to COVID-19. Instead of continuing to investigate LTC issues, we should focus our resources on implementing the recommendations in the identified reports.

Data availability

Underlying data

All data underlying the results are available as part of the article and no additional source data are required.

Extended data

Figshare: Supplementary tables from Recommendations from long-term care reports, commissions, and inquiries in Canada. <https://doi.org/10.6084/m9.figshare.13537412>¹⁴.

This project contains the following extended data:

- Supplementary Table 1
- Supplementary Table 2

Extended data are available under the terms of the [Creative Commons Attribution 4.0 International license](#) (CC-BY 4.0).

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Catherine E. Tong

School of Public Health Sciences, University of Waterloo, Waterloo, ON, Canada

Karen Khalil El Hajj

School of Public Health Sciences, University of Waterloo, Waterloo, ON, Canada

Thank you for the opportunity to review this novel manuscript. This paper provides an overview of the numerous reports and inquiries that have been commissioned across Canada regarding long-term care (LTC) and synthesizes the most common recommendations. The authors highlight the excessive costs incurred to produce these reports and make a compelling case for turning our efforts and attention to real change, rather than continuing to report (in a costly fashion) on known issues. We offer but a few queries that the authors may wish to consider:

- The authors spoke with organizations using a telephone script to ascertain costs. Can you please comment on why this did/did not require ethics approval?
- Regarding the sentence, "Indirect costs included time donated from authors who volunteered their time to produce the report.": The definition of indirect costs usually entails overhead or administrative costs, yet an author's direct time dedicated to writing up the report could be considered a direct cost, even if the author had a non-compensated role.
- As the authors note in the limitations, half of the reports' costs had to be estimated, largely because organizations could not be contacted or would not provide a cost estimation. A significant proportion of the data was estimated by the authors. While we recognize that the calculation used (# of reports per year/cost of all reports per year) might be the only way to estimate these costs, it is entirely possible that this is not an accurate representation. For example, an organization may have easily spent 80% of their annual budget on one large report and 20% on a series of smaller reports. Perhaps an additional sentence in the "Estimation of Cost Section" is warranted?
- Table 2 mentions responsive behaviours. Would it be possible to elaborate on the definition of responsive behaviour for readers without a health research/clinical background?

- In the cost and discussion section, there is mention of military reports as well as relevant deployments to long-term care facilities. Given this journal's international audience, it may be important to describe why there would be military reports and deployments to this sector.
- In the discussion section, the authors emphasize the costs and lost opportunities to Canada; however, LTC in Canada is managed provincially, and 31 of these reports focused on Ontario. How confident are you that the statements made in the discussion represent "Canada", and not specific provinces? We agree that there is no need to produce further reports, but do the data presented and arguments made represent "Canada", or do they represent the state of LTC in some provinces and territories?

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Dr. Tong: Geriatric health systems; home and community care; review article methods. Ms. Hajj is a doctoral student and trained health economist, with specialization in LTC.

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 25 Sep 2021

Eric KC Wong, Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Canada

Thank you for the comments. Please see below for responses to each comment.

The authors spoke with organizations using a telephone script to ascertain costs. Can you please comment on why this did/did not require ethics approval?

Author response: Ethics approval was not needed because we did not have research participants. The phone calls and emails were to gather information regarding report costs and not information regarding the staff answering the phone calls. As such, they were not research participants and ethics approval was not needed.

This flow diagram is helpful:

https://uwaterloo.ca/research/sites/ca.research/files/uploads/files/research_or_quality_assurance_decision_

Regarding the sentence, "Indirect costs included time donated from authors who volunteered their time to produce the report.": The definition of indirect costs usually entails overhead or administrative costs, yet an author's direct time dedicated to writing up the report could be considered a direct cost, even if the author had a non-compensated role.

Author response: Thank you for the correction. We have changed the line to:

"Direct costs included time donated from authors who volunteered their time to produce the report, consultancy fees, salaries, compensation for expert witnesses, graphics, layout, printing, and dissemination. Indirect costs included administrative costs and overhead." – Methods > Estimation of report cost, first paragraph.

As the authors note in the limitations, half of the reports' costs had to be estimated, largely because organizations could not be contacted or would not provide a cost estimation. A significant proportion of the data was estimated by the authors. While we recognize that the calculation used (# of reports per year/cost of all reports per year) might be the only way to estimate these costs, it is entirely possible that this is not an accurate representation. For example, an organization may have easily spent 80% of their annual budget on one large report and 20% on a series of smaller reports. Perhaps an additional sentence in the "Estimation of Cost Section" is warranted?

Author response: We added a sentence to the paragraph (added sentence in bold and underlined):

"When an estimated budget was not available, we searched online for global budget reports from the sponsoring organization. Total annual expenses for research, advocacy, or reports were divided by the number of reports published that year by the organization to generate an estimated cost. **This calculation assumed that all reports by the organization in that year were equal in cost.**" – Methods > Estimation of report cost, first paragraph.

Table 2 mentions responsive behaviours. Would it be possible to elaborate on the definition of responsive behaviour for readers without a health research/clinical background?

Author response: Added footnote to Table 2.

"*Responsive behaviours refer to actions, words or gestures that patients with dementia express in response to internal or external stimuli. Some examples of responsive behaviours include agitation, aggression, wandering, vocalization, etc."

Reference:

https://www.behaviouralsupportsontario.ca/32/behaviour_change_in_older_adults/

In the cost and discussion section, there is mention of military reports as well as relevant deployments to long-term care facilities. Given this journal's international audience, it may be important to describe why there would be military reports and deployments to this sector.

Author response: Added sentence to the discussion (in bold and underlined):

"The main limitation of this study was the lack of true cost estimates for half of the LTC reports. Some organizations lacked transparency about costing, and others lacked detailed accounting of spending. Staff turnover and record keeping practices were barriers to accessing data, particularly for the reports produced over 10 years ago. For government agencies, we often had to call multiple departments and speak with numerous representatives and noted considerable variation in the level of disclosure. For the two military reports during COVID-19, we likely underestimated the cost since they were generated as part of military duty. **The Canadian government deployed military personnel to some nursing homes due to critical shortages of staffing and resources when the pandemic started (16).** However, there were still considerable costs incurred by the public by having the military deployed to those LTCHs (26). We also grouped reports on health system improvement and care of older adults in general in this analysis because LTC is intricately tied to the health system at large. Leaders in the care of older adults, such as Denmark, design LTC policy as an integral part of their health system (27)." – Discussion, last paragraph.

In the discussion section, the authors emphasize the costs and lost opportunities to Canada; however, LTC in Canada is managed provincially, and 31 of these reports focused on Ontario. How confident are you that the statements made in the discussion represent "Canada", and not specific provinces? We agree that there is no need to produce further reports, but do the data presented and arguments made represent "Canada", or do they represent the state of LTC in some provinces and territories?

Author response: Although many reports were from Ontario (n=31), the majority of reports were based nationally or in other provinces (n=49). Recommendations from these reports were similar. The Royal Society of Canada "Restoring Trust" report on LTC (reference 9 in article), which was written by experts across the country, concluded that challenges to LTC were a national problem that required a concerted effort to fix. Although there may be provincial differences in LTC management, the recurrent problems are similar. A similar analysis from the Canadian Institutes of Health Information found that recommendations from COVID-19 LTC inquires from across the country came to similar conclusions (reference below). We think that the problems identified in these reports are applicable nationwide.

Reference: <https://www.cihi.ca/sites/default/files/document/impact-covid-19-long-term-care-canada-first-6-months-report-en.pdf>

Competing Interests: None

Version 1

Reviewer Report 25 May 2021

<https://doi.org/10.5256/f1000research.46348.r79798>

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Adelina Comas-Herrera

Care Policy and Evaluation Centre, London School of Economics, London, UK

This article is very timely, in the context of the need to learn lessons from the COVID pandemic's impact on long-term care systems. The pandemic has drawn wider attention to the long-standing structural problems of long-term care systems, and particularly long-term care facilities.

The analysis of the recommendations is particularly interesting, confirming that many of the problems identified during the pandemic were well known before and action was not taken to address them. I would have liked, ideally to see this separated by whether the reports were from before or during the COVID-19 pandemic, it would be interesting to highlight if, for example, infection control was present in the reports prior to the pandemic. In my view, some of the detailed reports on COVID outbreaks in specific facilities are very different than the reports on the structure of the LTC system and would need to be considered separately.

The analysis of the costs of the reports is an important contribution, but I have not been able to check the figures properly: I have checked the supplementary table 2 using the [link provided](#) and I cannot see cost estimates for any of the reports published since 2002. It may be that the table is incomplete?

I have a major concern on the interpretation of the costs of the reports: while I do agree that it is very important to ensure that there is no replication of reports and to avoid waste, I do not think the paper has established clearly the extent to which "the same problems have been studied repeatedly". While coming to the same broad recommendations, some of the reports may have advanced the understanding of the system and generated new data that may have had broader impacts, for example informing planning at regional level of information practice by providers.

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

No

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

Partly

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Long-term care and dementia care policy and economic aspects of care.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 31 May 2021

Eric KC Wong, Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Canada

Thank you for reviewing the article and for providing comments. Please see our response below:

Comment: The analysis of the recommendations is particularly interesting, confirming that many of the problems identified during the pandemic were well known before and action was not taken to address them. I would have liked, ideally to see this separated by whether the reports were from before or during the COVID-19 pandemic, it would be interesting to highlight if, for example, infection control was present in the reports prior to the pandemic. In my view, some of the detailed reports on COVID outbreaks in specific facilities are very different than the reports on the structure of the LTC system and would need to be considered separately.

Response We added a line highlighting that similar recommendations were found in reports dated before and after the pandemic. In Table 2, we added a line to the caption indicating that reports 1-10 were from after the pandemic and 11-48 were from before the pandemic. Each recommendation category had reports from both before and after the pandemic.

“Reviewing the reports from the last 10 years (n=48), we identified a median of 8 (IQR 3.25–18) recommendations per report. Numerous recommendations were repeated in these reports, and similar recommendations were made before and after the COVID-19 pandemic (Table 2).” – Results section, second paragraph

Comment: The analysis of the costs of the reports is an important contribution, but I have not been able to check the figures properly: I have checked the supplementary table 2 using the link provided and I cannot see cost estimates for any of the reports published since 2002. It may be that the table is incomplete?

Response: The figshare website only preview the first 2 pages of the document for some reason. If you download the Word document from their website, the full table is shown. Please let us know if you have problems with the file.

Comment: I have a major concern on the interpretation of the costs of the reports: while I do agree that it is very important to ensure that there is no replication of reports and to avoid waste, I do not think the paper has established clearly the extent to which “the same problems have been studied repeatedly”. While coming to the same broad recommendations, some of the reports may have advanced the understanding of the system and generated new data that may had broader impacts, for example informing planning at regional level of information practice by providers.

Response: We agree that reports may advance our understanding of the LTC system in small increments, but based on the number of times similar recommendations have been repeated, we think there is substantial overlap in problems identified in the reports. As an example, the recently published Ontario Long Term Care COVID-19 Commission had 85 recommendations [1]. Only the first 26 recommendations were about pandemic management. The remaining 59 recommendations addressed longstanding issues with the LTC system, including resident quality of life, staff shortages, lack of staff training, poor working conditions, lack of funding, inadequate regulation, insufficient accountability, and lack of performance indicators and standards. Even the first 26 recommendations included general infection control measures previously recommended during the SARS pandemic in 2003. Similarly, the authors of the included reports in our analysis chose to highlight the same broad recommendations because those are the limiting factors to improving the LTC system. Even if there were incremental lessons and improvements, the fact that recommendations were not substantively different represented a missed opportunity to correct the most important, longstanding problems.

Added line in discussion:

“Although the total cost of \$23 million in generating LTC reports may seem insignificant compared to a government budget, it represents a substantial, lost opportunity to continually improve Canadian LTCHs. Studying the same problems repeatedly means Canadian experts are confined to revisiting critical deficiencies in LTC instead of innovating new care models. Even if there were incremental lessons and improvements from these reports, they were inadequate in preventing one crisis after another. While Canada ranks among the best countries in the world for health innovation, this pandemic highlighted a contrasting story of neglected policy in LTC.”
– Discussion section, fourth paragraph

Reference

1. Marrocco FN, Coke A, Kitts J. Ontario’s Long-Term Care COVID-19 Commission: Final

Report [Internet]. Toronto; 2021 Apr [cited 2021 May 29]. Available from: http://www.ltccommission-commissionsld.ca/report/pdf/Ontarios_Long-Term_Care_COVID-19_Commission_Final_Report.pdf

Competing Interests: No competing interests to disclose.

Reviewer Report 09 March 2021

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Lynn Chenoweth

University of New South Wales, Sydney, Australia

This review on the breadth, costs and recommendations arising from investigative reports on the Canadian LTC system is comprehensive, insightful and plausible.

It reflects the situation in many other developed nations and provides sufficient evidence to taking global action to redress the continuing government failure to redress LTC staffing issues.

This well-conducted review has clearly identified the issues associated with funding support for the aged care sector, as identified in multiple commissions of inquiry and independent reviews over a decade. The review highlights the poor-level of government sponsorship of the sector, which translates to having inadequate funds allocated to professional staffing complements. This issue has led to cuts in professional staff and an over-supply of poorly paid and inadequately-educated care workers. Specialised care and therapy needs remain unmet for the majority of older people who would benefit from receiving them. The review makes clear that the funds spent on investigating and identifying these issues have been high, and have not resulted in any tangible benefits for the sector. The authors argue that if these funds had been used to actually redress the staffing issue, the benefits would be obvious. This review has international importance, since these issues are repeated across the aged care sector in both developed and under-developed nations. Clearly, it does not need any further commissioned reviews and independent inquiries to reinforce what we already know - that care standards will only improve when aged care is funded commensurate with acute care sector services for older people.

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Yes

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Aged care, transitions in ageing, dementia care, health and aged care services, person-centered care, carer support.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

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