

What worked well?

Lessons learnt from the second wave of COVID-19 outbreaks in Victorian aged care services: Mapping activity

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Report for DHVic

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Executive Summary

The COVID-19 (SARS-Cov-2) pandemic has had a profound impact on residential aged care homes (RACHs), both in Victoria and internationally. This is due to various factors including higher symptom severity and morbidity among older people with complex health needs and the congregate nature of residential care. There is an urgent need for research that can assess how the pandemic has changed residential aged care, and to support the sector to manage COVID-19 or other pandemics in the future.

Project aim

This project aimed to map existing and ongoing research into COVID-19 in residential aged care in Victoria, Australia.

Methods

The study comprised two concurrent methods:

- A rapid review of academic databases, searching for international scholarly literature.
- An environmental scan of grey literature related to Victoria, which involved searches of key websites and search engines, as well as direct communication with stakeholders.

Findings

Literature on Victoria was scarce so the search was extended to map the Australian and international literature. The review of Australian and international literature revealed several areas for potential future research into the impact of COVID-19 on RACHs. These include:

- Preparedness, or the measures RACHs have in place to avoid or minimise COVID-19 outbreaks
- Workforce issues, such as the need for clinical skills and employment security among staff
- Access to medical care and allied health, including adoption of telehealth
- Co-ordination with health services and government, such as strengthening communications between health and aged care sectors.
- Impact on residents, including strategies to minimize social isolation during lockdowns
- Impact on staff, including the impact of lockdowns/outbreaks on their mental health and routine care practices.
- Impact on family contact, and consideration of the harm of isolating residents from family.
- Facility characteristics: whether different models of RACHs or provider types have higher risk
- Community characteristics: associations between RACH outbreaks and the wider community

Discussion

Research into COVID-19 in residential aged care in Australia is still at an early stage. A large proportion of literature published to date, both in Australia and internationally, consists of commentary or opinions rather than research studies. The most substantial research in Australia so far are Commonwealth Department of Health reviews. These studies are reactive in nature, focused on learning from the failures of RACHs to prevent or control outbreaks. Given the severity of the situation and the restrictions that the pandemic has placed on public access to aged care homes, including for researchers, it is unsurprising that outbreak prevention has been the overwhelming priority in Australia. However, the diversity of topics emerging in the international literature suggests considerable scope for future research examining the changes COVID-19 has brought to the aged care sector and the impact on residents, families and aged care workforce, both in the short and long-term.

Background

COVID-19 (SARS-Cov-2) was declared a pandemic on 11 March 2020, and has since spread to most countries globally. The pandemic has been especially challenging for residential aged care homes (RACH). This is largely owing to the particular vulnerability of older people living in this setting – especially those with complex health conditions – to COVID-19-related symptoms and mortality. In addition, the pandemic has highlighted limitations in the density and size of RACHs, a lack of preparedness among aged care providers and workforces, and a need to improve co-ordination at the interfaces between aged care and healthcare systems.

Compared to international experiences, the spread of COVID-19 in Australia has so far been limited among the Australian general population. Despite this, the pandemic has had a significant impact on Australia's residential aged care sector. As of April 2021, there have been 214 COVID-19 outbreaks in RACHs, with 2,029 residents and 2,227 staff known to have been infected [1]. The nature and impact of outbreaks has varied between homes. While some homes have successfully minimised the spread of COVID-19 among residents and staff, others have witnessed large outbreaks and, sadly, deaths of residents. There have been 685 COVID-19-related deaths of aged care residents – 75% of all Australian deaths [2]. Over 95% of these deaths occurred in Victoria, during the “second coronavirus wave” between June and September 2020.

This study

Given the unprecedented impact of COVID-19 on Victoria's aged care sector, we undertook a mapping exercise to identify planned, current or recently completed audits/research on COVID-19 in Victorian RACHs. The aim was to collate a current register of existing and ongoing research, to identify gaps in the evidence and scope of current or ongoing research, and to formulate recommendations for future research. A paucity of available literature about COVID-19 in Victorian RACH was identified. The search was therefore expanded, first to Australian, then international, literature. Conducting this more comprehensive mapping exercise allowed us to identify gaps in the Victorian literature, and possible avenues for future research.

The objectives of the project were:

- i. To conduct a rapid review to identify all published research about COVID-19 that pertains to RACH in Victoria, Australia and internationally.
- ii. To perform an environmental scan of websites of peak agencies, professional interest groups and government sites to identify COVID-19 research that pertains to RACH in Victoria, Australia and internationally
- iii. To perform a content analysis of the documents involving coding of key themes and elements within the texts
- iv. To appraise the strengths and limitations of the findings in terms of informing prevention and responses to future outbreaks.
- v. To report on strengths and limitations of the Victorian literature, and identify key areas for investment in future research.

Method

The approach comprised both a rapid review of published research on COVID-19 in RACHs and an environmental scan to identify all audits/research (planned, current or completed). The rapid review comprised a systematic identification of local and international research through search of academic databases. The environmental scan involved a targeted search of Google, government and other

service websites, and personal communications with key individuals in Victorian health and aged care sectors.

Rapid review

Five academic databases were searched (Medline, PsycINFO, Web of Science, Scopus, and CINAHL) using terms related to COVID-19 and RACHs, with bespoke strategies that utilised indexing features of each database. Inclusion/exclusion criteria were devised and Covidence, a web-based systematic review platform, was used to screen titles and abstracts for relevance.

There are international differences in the terms used to define RACHs, as well as what constitutes a RACH. Hence, we used equivalent terms such as “nursing home”, “aged care home”, “long-term care”, and “assisted living”, referring to settings where older people with high care needs reside long-term. Publications focused on post-acute or rehabilitative care facilities, independent living communities, service-integrated housing and primary care were excluded.

Three hundred and nineteen (319) relevant international publications were identified, of which 16 were scholarly publications related to COVID-19 in Australian aged care contexts. Of these, four were excluded after full text review (see Figure 1, Appendix D). The 12 included Australian studies are summarised in Table 1 (Appendix A).

A bespoke extraction form was designed, using the Covidence extraction utility, to assess all 319 international publications. The form contained entries for country, topic, method, sampling unit, and sample size. During extraction, 64 further papers were excluded; leaving data from 239 papers (inclusive of Australian literature). Information was extracted from Covidence into R, a statistical analysis software package, which was used to create frequency plots of the international literature (see Appendices E-H).

Environmental scan

An environmental scan for Australian grey literature was conducted for terms related to COVID-19 and RACHs. The search included case reports, reports, submissions and testimony to the Royal Commission into Aged Care Quality and Safety, ongoing current research and completed unpublished research. The scan was conducted through a structured search using Google, targeted search of government departmental and other aged care interest groups (including peak bodies), and direct engagement with key service providers and academics. A majority of the search results comprised of guidelines and policy publications, which were excluded from the analysis. Furthermore, the Royal Commission into Aged Care Quality and Safety conducted two hearings in Sydney examining the response to COVID-19 pandemic in the aged care sector, testimony and submissions to these hearings were not individually included but the resultant royal commission special report was included. This left ten reports from a variety of government and industry sources included in the analysis summarised in Table 2 (Appendix B). Ongoing Australian studies located during the environmental scan are summarized in Table 3 (Appendix C).

Findings

Australian literature

Of the 12 included Australian studies, six were empirical studies, five were discussion/editorial pieces, and one was a personal reflection. Of the empirical studies, there were two case reports, 1 case series, two studies involving interviews, and one mixed methods development of a COVID-19 screening instrument. Within the grey literature 10 Australian reports were included, three were case reports

on outbreaks, three reports provided by peak or government bodies summarising learnings, two reports on survey findings, a discussion paper and a financial survey report.

International Literature

A scan of international literature on COVID-19 in RACHs revealed that the largest source of research is the United States, followed by Canada and the UK (see Appendices). Non-English language literature was excluded. This necessarily resulted in a bias against literature from non-English speaking countries. The largest proportion of published English-language literature consisted of commentary by researchers or other experts. This was followed by cross sectional surveys, either at a RACH or individual level, which covered a very broad range of topics including resident/staff experiences, home preparedness, and home characteristics, among others. Our assessment of this international literature guide the analysis of Australian literature and helped us to identify gaps in Australian research for future topics for research.

Major themes

We have organized the major themes discovered during both the literature review and environmental scan into subheadings below. We also include some direct quotations, all taken from the Australian literature, in text boxes.

Preparedness

Much of the Australian literature emphasised the need for RACHs to be prepared for an outbreak of COVID-19 and the role that staff play in successfully managing outbreaks [3-6]. Preparedness referred to a range of things:

- Having outbreak contingency plans that determine actions in the instance of a positive case;
- Ensuring there is sufficient supply of personal protective equipment (PPE) and that staff know how to use it;
- Clear coordination and communication with local health services, which clarify concerns like hospital transfers.

Poor management of outbreaks, such as the cases of St Basils and Epping Gardens in Melbourne, were largely attributed to a lack of preparedness. While these RACHs had been previously assessed as being fully compliant in meeting quality and safety standards, there were no outbreak management plans developed or trialled in the homes in question [7]. A survey of members of the Australian Nursing and Midwifery Federation (ANMF) conducted in June 2020 found that almost half of the respondents did not feel prepared for a COVID-19 outbreak in their home with an additional 19% indicating doubts about their preparedness[8].

“... although we were preparing; I thought we were prepared. Nothing prepared us for what was to come.”

Medical Specialist, Nepean Hospital – Newmarch
House COVID-19 Outbreak

By contrast, preparedness was often associated with successful management of outbreaks. In homes where infection was successfully controlled, the homes were generally described as well prepared [3-5]. This meant they paid close attention to infection control and prevention (ICP) guidelines, frequently tested and monitored residents and staff, promptly isolated positive cases, and maintained effective communications with staff, family and health authorities [5].

To ascertain the preparedness of the residential aged care sector, Professor Lyn Gilbert and Adjunct Professor Alan Lilly have been commissioned by the Department of Health, to undertake a national review of COVID-19 outbreaks in Australian RACHs. As part of this review residential aged care managers are asked to complete an online survey about their home's preparation for and, if an outbreak occurred, their management of a COVID-19 outbreak. This survey closed recently and at the time of writing results have not been made public.

Workforce issues

Where RACH staff had been trained to identify symptoms of COVID-19, in using Personal Protective Equipment (PPE) and Infection Control and Prevention (ICP) procedures, outbreaks in Australia were more successfully managed [5]. Lack of staff training or inconsistent training is associated with more serious outbreaks [3, 4]. Both in Australia and other countries, there is a large body of literature that attributes poor working conditions and employment precariousness with an increased risk of major COVID-19 outbreaks [6, 9-11]. One US survey specifically found that staff unionisation was associated with lower COVID-19 mortality among residents[12]. Australian commentary and reports including the Royal Commission into Aged Care Quality and Safety broadly agree that Australia's aged care workforce has deskilled over time leaving the sector lacking the optimal clinical expertise to manage COVID-19 [6, 9, 13, 14]. Noting this, one study argued that screening tools should be developed to be usable by staff without clinical expertise [14].

'...infection control rolls off people's tongues, but they don't really understand what it means. And they certainly don't understand how to implement it and ... how to continually interrogate and resolve the issues that people come up with ...'

IPAC Specialist interviewed as part of Newmarch Report.

In the independent review on the outbreaks at St Basils and Heritage Care compiled by Gilbert and Lilly, they identified that there was insufficient surge workforce planning to manage the scale of the outbreak. Many permanent staff did not return to work and those that did were, understandably, distressed and afraid. As the size of the outbreak increased it was assumed that all personal care staff and RNs had been close contacts, and hence, they were required to self-isolate. For a period of time the homes were staffed by managers and volunteers resulting in a lack of personal care and clinical leadership. In response, a number of health service staff and key clinical leaders from local health services were seconded to provide consistent on-site clinical leadership whilst outbreaks within the home were brought under control [7]. However, as the report describes, much of the surge workforce lacked aged care experience or training, which led to gaps in care.

In the international literature, we identified a number of studies analysing the movement of staff between different RACHs [15], using a different methods such as mobile phone tracing and surveys [16]. When staff move from home to home, the evidence suggested a higher risk of COVID-19 transmission between sites. We did not locate any Australian studies examining this important risk.

Access to medical care and allied health

COVID-19 lockdowns have had a major impact on residents' access to routine medical and allied health care. Within the international literature, we identified some studies examining the use of telehealth and other technologies to facilitate access to health professionals during social distancing [17-19].

Various commentary papers discussed interruptions in access to allied health, such as speech pathologists [20]. It is evident that the COVID-19 pandemic has prompted a global effort to advance remote communication technologies as a way of facilitating residents' access to care, and that these advances will likely continue beyond the pandemic.

Of the published Australian literature, only one qualitative study [21] and a commentary [22] examined residents' access to chaplains. One short commentary discussed barriers to accessing telehealth for residents [23]. Given the large amount of health and aged care sector interest in this area, and given we still know little about the effect of lockdowns on residents' routine care, there is significant scope for future research on this topic.

Co-ordination with health services and government

In response to the Covid-19 pandemic in Victorian RACHs, there was a strengthening of the relationship between local health services and private providers with health services staff deployed into affected homes to provide clinical leadership and bring outbreaks under control.

Communication from government was a challenge with providers reporting that at the beginning of the pandemic there was no clear chain of command from Government or that they did not know how to access it [7]. In response to the pandemic, processes have been implemented including statewide coordination provided through Aged Care Response Centres that brought together the key players from an emergency, regulatory, public health, care delivery and advocacy perspective. Other measures included automatic triggers for provision of supplies such as surge workforce, PPE and pathology testing, were instigated in NSW [7].

The special report from the Royal Commission into Aged Care Quality and Safety on Covid-19 highlighted differences between RACHs in relation to the transfer of COVID-19 positive residents to health services [24]. In response to the outbreak at Newmarch House in Sydney, where residents were treated at their RACH under the Hospital in the Home Program, the local learnings were that in future outbreaks they would transfer residents at an earlier stage due to three issues [25]:

- (i) managing the risk of infection to other residents,
- (ii) managing the risk of infection to staff
- (iii) resident wellbeing due to the need of being isolated in their rooms with doors closed while receiving treatment.

There was little consensus between experts and state health departments on whether residents who tested positive should have been transferred to hospital, however, many cited the WHO principles advocating for automatic transfer to hospital in order to potentially improve survival rates and reduce the risk of infection to other residents [24, 26]. This automatic transfer of residents led to many people

"One resident was reviewed and was actively dying – there were lots of conversation about whether she should be transferred or not, however given we had no morphine, clean linen or other equipment I made the decision to send her."

Chief Nursing Officer seconded into RACH to provide assistance with regards to transfers – Submission to the Royal Commission into Aged Care Quality and Safety

transferred to hospital against their wishes and against their formally documented Advance Care Plans.

This lack of clear direction and policy prompted a commentary suggesting guidelines for admitting aged care residents who have tested positive to COVID-19 to emergency departments during a pandemic [27]. Another short commentary piece discussed the upscaling of geriatric outreach services in South Western Sydney during lockdown, to help minimise residents' exposure to potential infection in hospital environments [28]. Similar research documenting the responsiveness of acute care outreach services was found in North American literature [29-31].

Impact on residents

There is as yet no published Australian scholarly literature documenting residents' experiences of the pandemic or associated restrictions. A survey, led by Swinburne University, is currently being conducted with aged care staff and residents from 2,700 Australia RACHs to understand the impact of the pandemic on their mental health, with results due out later in 2021 [32]. Several international studies have already been published examining this impact. The primary focus of this literature was the social isolation residents experienced [33, 34], with some studies reporting on innovations (usually using communication technologies) to reduce isolation [35, 36]. International studies reported that residents felt if they were in a prison [37], and were missing face-to-face contact with family [38, 39]. The impact of the pandemic and associated restrictions on residents' mental wellbeing is emerging as an important topic of research internationally [40, 41].

Impact on staff

International literature features increased interest in residential aged care staffs' experiences during the pandemic. Of interest are the impact of lockdown measures and outbreaks on mental health and wellbeing [42-44], morale [45], and post-traumatic stress [46, 47].

"I left at the end of a long day, was driving home and didn't even realise I had started to cry. I felt so sick with what I had seen but also an overwhelming feeling of guilt that I had left and not stayed."

Chief Nursing Officer seconded to provide clinical leadership – Submission to Royal Commission into Aged Care Safety and Quality

Other topics include investigation of how lockdowns and ICPs influenced staffs' routine care practices [39, 48], staff attitudes towards testing and ICP [49, 50], and staff willingness to receive vaccinations [51, 52]. Some studies took an appreciative lens and emphasised the resilience and dedication that aged care staff showed in meeting challenges posed by lockdowns and ICP [53-56].

In Australia, Government commissioned case reports of the Newmarch House, St Basils and Epping Gardens outbreaks contain some staff and family testimony [7, 25], as does testimony presented to the Aged Care Royal Commission's second Sydney hearing [24, 57]. The Swinburne survey is also investigating the impact of the pandemic on aged care staff. However, from our review, there is still a gap in in depth qualitative research examining resident or staff perspectives and experiences in Australia.

Impact on family contact

In a survey conducted by the aged care peak body Leading Age Services Australia (LASA), 89% of RACHs reported imposed restrictions on family visitation [58]. Many editorial and commentary pieces discussed the impact of lockdowns on visitation, by families or others. Some commentators raised the question of whether social isolation of residents during lockdowns results in negative outcomes that outweigh the positives of outbreak prevention [59-63]. A small number of international studies surveyed or interviewed family members, documenting many concerns about what a prolonged loss of face-to-face contact meant for both residents and their families [64-66]. One study observed that restricting visits meant family members were no longer able to contribute to care work, which had a negative impact on the overall quality of care [67].

Reviews of Henderson Lodge, St Basils and Epping Gardens contain some testimony from family members about the loss of contact with resident family members [7, 68]. Likewise, testimony by some family members of aged care residents was presented to the Royal Commission into Aged Care quality and Safety [24]. The testimony is harrowing at times, revealing a breakdown in communication between homes and family members during outbreaks, and family members' fear that aged care providers were failing to protect their relatives from COVID-19 infection. A study by the Melbourne Ageing Research Collaboration is currently investigating the how lockdown restrictions affected the care family members provide to aged care residents, as well as the strategies they used to maintain contact. Given how lockdowns affected the aged care sector as a whole, there considerable scope for further Australian research into social isolation of residents during lockdowns and the perspectives of family members.

Facility characteristics

Both in Australia and internationally, there is interest in whether the type of RACH or design influences the risk of COVID-19 outbreaks. Older homes might be at higher risk of outbreaks, as they are more likely to have infrastructure (such as shared bedrooms and bathrooms) that makes "cohorting" – separating residents who test positive from others by moving them to an isolated area within a RACH – difficult [4]. There are also efforts to improve ventilation in RACHs [69]. There is currently debate among commentators about the implications of COVID-19 for models of care in Australia. While some have called for a greater emphasis on acute care infrastructure and ICP in RACHs [13], others argue a lower density of residents and staff will reduce risk and endorse capital funding of home-like domestic models [70]. The benefits of smaller, lower density homes has also been raised in international literature [71, 72].

In international literature, several studies have examined whether the RACH type or characteristics are associated with an increased risk of COVID-19 outbreaks [73, 74]. There is some evidence for that for-profit status is associated with more severe outbreaks and higher COVID-19 mortality in North America, owing mainly to older infrastructure, lower staffing levels, and greater likelihood of PPE shortages compared to RACHs operating under other organisational models [75-77]. Studies examined the association between quality ratings and outbreak risk or outbreak severity, but usually did not report strong correlations [78-81]. Further research is needed to examine these associations in the Australia. However, we caution against generalising international findings to the Australian context because of differences in quality rating systems and ownership patterns.

Community characteristics

Some international literature examined associations between COVID-19 prevalence in local communities with outbreaks in RACHs. In particular, where staff members resided in communities with a high COVID-19 burden, the risk of outbreaks in RACHs where they were employed was found

to be higher [82-87]. There are yet no studies examining correlates between community infection and RACH outbreaks in the Australian literature.

Discussion

The COVID-19 pandemic remains a developing situation. This review is being written only 14 months after the pandemic was first declared, hence it is very early in the trajectory of research about the impact of the pandemic on RACH. Moreover, the heightened risks associated with COVID-19 for aged care residents has restricted the amount of first-hand research that is possible to conduct within RACHs globally. Given this, it is unsurprising that the largest proportion of published literature we located comprises commentary and opinion pieces, rather than empirical research. We found no randomised control trials among the literature, and very few qualitative studies, which is understandable given the length of preparation such research involves.

The findings from this scoping review suggest that much of the existing research literature has been reactive; focused on how to prepare homes for outbreaks, identify positive cases, and minimise spread if and when cases are detected. Much of the international literature focusses on detailed questions of infection control, including the use of masks and other PPE, testing measures and procedures, cleaning practices, and positive case isolation protocols. This body of research is not described in detail in this review, because the focus was on the impact of COVID-19 on the sector.

There is considerable scope for further qualitative research that documents the first-hand experiences of various stakeholders during the pandemic, including residents, staff members, family members, health practitioners, and others. Some first-hand reports are available in Department of Health reviews and testimony to the Royal Commission's Sydney hearing. However, these tend to account for the extreme cases, and may not be representative of the experiences of the aged care sector as a whole. An additional benefit of conducting qualitative studies would be the opportunity for aged care staff and residents to debrief about their experience. In conducting the environmental scan component of this project, we interviewed a number of front line workers, who were keen to have an opportunity to reflect on their experiences.

Workforce issues are a prevailing concern within the body of literature about COVID-19 in the aged care sector. Clinical training, prepares aged care staff with a base-line competence in skills that are crucial during a pandemic, such as infection control and symptom recognition. Yet even prior to the COVID-19 pandemic, reversing the deskilling of the aged care workforce was raised as a priority for the Royal Commission [88, 89].

Another concern is the precarious agency-based nature of much aged care work. Policies introduced in Australia, Canada and Europe restricted staff circulation between homes while outbreaks have been ongoing in those countries, a known risk factor for inter-home infection. During the second coronavirus wave in Victoria, there was significant media attention on staff absenteeism and the lack of surge capacity in the aged care workforce. However, there is so far little published research on the relationship between skills, working conditions, employment status, and staff motivations to work during a pandemic. This is an important area for further research, as is any differences in both quality of care and pandemic management between regular staff and the surge workforce.

This review identified significant gaps in research on COVID-19 in RACHs in Victoria and Australia about the impact of restrictions on access to medical and allied health. Several international studies demonstrate the advantages of acute care outreach services during pandemics, particularly as they allow residents to avoid the heightened risk of infection from hospital admissions or transfers for non-COVID-19 related conditions. There is a need to better understand the repercussions of restricting

residents' access to allied health practitioners, such as physiotherapists, podiatrists, speech pathologists, dentists, and others. This is important both in terms of how reduced care affected residents' health and well-being, but also any strategies that practitioners innovated to maintain continuity of care despite restrictions.

A consistent message across much of the research, and echoed in the Royal Commission's special report [24], was that the COVID-19 pandemic caught the aged care sector unaware and brought to light a range of longstanding problems. Foremost among these is the need to build the capacity and skill-base of the aged care workforce.

This project has produced a register of current and ongoing research on COVID-19 in Victorian RACHs. By extending the search to Australian and international research on COVID-19 in RACH, gaps in the evidence and scope of this research, were identified, leading to the formulation of recommendations for future research. As the pandemic remains an ongoing concern, there would be some value in maintaining the currency of the registrar in this important and uncharted area of policy and practice.

References

- [1] Department of Health, COVID-19 outbreaks in Australian residential aged care facilities, Australian Government, 2021. <https://www.health.gov.au/sites/default/files/documents/2021/04/covid-19-outbreaks-in-australian-residential-aged-care-facilities-16-april-2021.pdf>.
- [2] Department of Health, Coronavirus (COVID-19) current situation and case numbers Australian Government, 2021. <https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers>.
- [3] G.L. Gilbert, COVID-19 in a Sydney nursing home: a case study and lessons learnt, *Med J Aust* 213(9) (2020) 393-396 e1. <http://doi.org/10.5694/mja2.50817>
- [4] P. Viray, Z. Low, R. Sinnappu, P.A. Harvey, S. Brown, Residential aged care facility COVID-19 outbreaks and magnitude of spread among residents: observations from a Victorian residential in-reach service, *Intern Med J* 51(1) (2021) 99-101. <http://doi.org/10.1111/imj.15143>
- [5] A. Zheng, L.S. Govindasamy, J. Thomas, J. Branley, A.T. Craig, M. Douglas, Lessons from a successful public health response to COVID-19 in a New South Wales residential aged care facility, 2020, *Aust N Z J Public Health* 45(1) (2021) 13-16. <http://doi.org/10.1111/1753-6405.13077>
- [6] G.E. Aitken, A.L. Holmes, J.E. Ibrahim, COVID-19 and residential aged care: priorities for optimising preparation and management of outbreaks, *Med J Aust* 214(1) (2021) 6-8 e1. <http://doi.org/10.5694/mja2.50892>
- [7] L. Gilbert, A. Lilly, Coronavirus (COVID-19) – Independent review of COVID-19 outbreaks at St Basil's and Epping Gardens aged care facilities, Department of Health, Australian Government, Canberra, 2020. <https://www.health.gov.au/resources/publications/coronavirus-covid-19-independent-review-of-covid-19-outbreaks-at-st-basil's-and-epping-gardens-aged-care-facilities>
- [8] A.N.a.M.F.F. Office), National COVID-19 in Aged Care Survey - Final Report, 2020. http://www.anmf.org.au/documents/reports/ANMFAgedCareCOVID-19Survey2020_FinalReport.pdf
- [9] K.S. McGilton, A. Escrig-Pinol, A. Gordon, C.H. Chu, F. Zuniga, M.G. Sanchez, V. Boscart, J. Meyer, K.N. Corazzini, A.F. Jacinto, K. Spilsbury, A. Backman, K. Scales, A. Fagertun, B. Wu, D. Edvardsson, M.J. Lepore, A.Y.M. Leung, E.O. Siegel, M. Noguchi-Watanabe, J. Wang, B. Bowers, Uncovering the Devaluation of Nursing Home Staff During COVID-19: Are We Fuelling the Next Health Care Crisis?, *J Am Med Dir Assoc* 21(7) (2020) 962-965. <http://doi.org/10.1016/j.jamda.2020.06.010>
- [10] R.J. Gorges, R.T. Konetzka, Staffing Levels and COVID-19 Cases and Outbreaks in U.S. Nursing Homes, *J Am Geriatr Soc* 68(11) (2020) 2462-2466. <http://doi.org/10.1111/jgs.16787>
- [11] H. Xu, O. Intrator, J.R. Bowlblis, Shortages of Staff in Nursing Homes During the COVID-19 Pandemic: What are the Driving Factors?, *J Am Med Dir Assoc* 21(10) (2020) 1371-1377. <http://doi.org/10.1016/j.jamda.2020.08.002>
- [12] A. Dean, A. Venkataramani, S. Kimmel, Mortality Rates From COVID-19 Are Lower In Unionized Nursing Homes, *Health Aff (Millwood)* 39(11) (2020) 1993-2001. <http://doi.org/10.1377/hlthaff.2020.01011>
- [13] J.E. Ibrahim, COVID-19 and residential aged care in Australia, *Australian Journal of Advanced Nursing* 37(3) (2020). <http://doi.org/10.37464/2020.373.226>

- [14] K. Gnanasambantham, G. Aitken, B. Morris, J. Simionato, E.H. Chua, J.E. Ibrahim, Developing a clinical screening tool for identifying COVID-19 infection in older people dwelling in residential aged care services, *Australas J Ageing* 40(1) (2021) 48-57. <http://doi.org/10.1111/ajag.12884>
- [15] A. Jones, A.G. Watts, S.U. Khan, J. Forsyth, K.A. Brown, A.P. Costa, Bogoch, II, N.M. Stall, Impact of a Public Policy Restricting Staff Mobility Between Nursing Homes in Ontario, Canada During the COVID-19 Pandemic, *J Am Med Dir Assoc* 22(3) (2021) 494-497. <http://doi.org/10.1016/j.jamda.2021.01.068>
- [16] M.K. Chen, J.A. Chevalier, E.F. Long, Nursing home staff networks and COVID-19, *Proc Natl Acad Sci U S A* 118(1) (2021). <http://doi.org/10.1073/pnas.2015455118>
- [17] D.A. Harris, L. Archbald-Pannone, J. Kaur, D. Cattell-Gordon, K.S. Rheuban, R.L. Ombres, K. Alberio, R. Steele, T.D. Bell, J.B. Mutter, Rapid Telehealth-Centered Response to COVID-19 Outbreaks in Postacute and Long-Term Care Facilities, *Telemed J E Health* 27(1) (2021) 102-106. <http://doi.org/10.1089/tmj.2020.0236>
- [18] M. Ohligs, S. Stocklassa, R. Rossaint, M. Czaplik, A. Follmann, Employment of Telemedicine in Nursing Homes: Clinical Requirement Analysis, System Development and First Test Results, *Clin Interv Aging* 15 (2020) 1427-1437. <http://doi.org/10.2147/CIA.S260098>
- [19] F. Razak, S. Shin, F. Pogacar, H.Y. Jung, L. Pus, A. Moser, L. Lapointe-Shaw, T. Tang, J.L. Kwan, A. Weinerman, S. Rawal, V. Kushnir, D. Mak, D. Martin, K.G. Shojania, S. Bhatia, P. Agarwal, G. Mukerji, M. Fralick, M.K. Kapral, M. Morgan, B. Wong, T.C.Y. Chan, A.A. Verma, Modelling resource requirements and physician staffing to provide virtual urgent medical care for residents of long-term care homes: a cross-sectional study, *CMAJ Open* 8(3) (2020) E514-E521. <http://doi.org/10.9778/cmajo.20200098>
- [20] M.C. Leaman, J.H. Azios, Experiences of Social Distancing During Coronavirus Disease 2019 as a Catalyst for Changing Long-Term Care Culture, *Am J Speech Lang Pathol* 30(1) (2021) 318-323. http://doi.org/10.1044/2020_AJSLP-20-00176
- [21] H. Tan, C. Holmes, E. Flynn, L. Karimi, "Essential Not Optional": Spiritual Care in Australia during a Pandemic, *J Pastoral Care Counsel* 75(1_suppl) (2021) 41-45. <http://doi.org/10.1177/1542305020985071>
- [22] K.F. Jones, J. Washington, M. Kearney, M.C. Best, Responding to the "unknown assailant": A qualitative exploration with Australian health and aged care chaplains on the impact of COVID-19, *J Health Care Chaplain* (2020) 1-15. <http://doi.org/10.1080/08854726.2020.1861536>
- [23] A. Seifert, J.A. Batsis, A.C. Smith, Telemedicine in Long-Term Care Facilities During and Beyond COVID-19: Challenges Caused by the Digital Divide, *Front Public Health* 8 (2020) 601595. <http://doi.org/10.3389/fpubh.2020.601595>
- [24] Royal Commission into Aged Care Quality and Safety, Aged care and COVID-19: a special report, Adelaide, 2020. <https://agedcare.royalcommission.gov.au/publications/aged-care-and-covid-19-special-report>
- [25] L. Gilbert, A. Lilly, Coronavirus (COVID-19) – Newmarch House COVID-19 Outbreak Independent Review, Department of Health, Australian Government, Canberra, 2020. <https://www.health.gov.au/resources/publications/coronavirus-covid-19-newmarch-house-covid-19-outbreak-independent-review>
- [26] S.A. Health, COVID-19 Integrated Response Framework for the Management of Multiple Outbreaks in Residential Aged Care Facilities in South Australia, 2020. <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/resources/covid-19+integrated+response+framework+for+the+management+of+multiple+outbreaks+in+residential+aged+care+facilities+in+south+australia>
- [27] E. Burkett, C.R. Carpenter, C. Hullick, G. Arendts, J.G. Ouslander, It's time: Delivering optimal emergency care of residents of aged care facilities in the era of COVID-19, *Emerg Med Australas* 33(1) (2021) 131-137. <http://doi.org/10.1111/1742-6723.13683>
- [28] D. Ní Chróinín, A. Patil, Geriatric outreach to residential aged care: Embracing a dynamic approach in the COVID-19 era, *Australasian Journal on Ageing* 39(3) (2020) 310-310. <http://doi.org/https://doi.org/10.1111/ajag.12826>
- [29] M.J. Lamb, A. La Delfa, M. Sawhney, D. Adams, K. Abdel-Shahied, T. Belfer, J. Schembri, K. Katz, Implementation and Evaluation of an IPAC SWAT Team Mobilized to Long-Term Care and Retirement Homes During the COVID-19 Pandemic: A Pragmatic Health System Innovation, *J Am Med Dir Assoc* 22(2) (2021) 253-255 e1. <http://doi.org/10.1016/j.jamda.2020.11.033>
- [30] G. Vallecillo, M. Anguera, N. Martin, M.J. Robles, Effectiveness of an Acute Care for Elders unit at a long-term care facility for frail older patients with COVID-19, *Geriatr Nurs* (2020). <http://doi.org/10.1016/j.gerinurse.2020.10.004>
- [31] N.M. Stall, C. Farquharson, C. Fan-Lun, L. Wiesenfeld, C.A. Loftus, D. Kain, J. Johnstone, L. McCreight, R.D. Goldman, R. Mahtani, A Hospital Partnership with a Nursing Home Experiencing a COVID-19 Outbreak:

- Description of a Multiphase Emergency Response in Toronto, Canada, *J Am Geriatr Soc* 68(7) (2020) 1376-1381. <http://doi.org/10.1111/jgs.16625>
- [32] Swinburne University, Swinburne leads study investigating the mental health impacts of COVID-19 in aged care, 2020. <https://www.swinburne.edu.au/news/2020/09/covid-19-survey-mental-health-aged-care/>.
- [33] C. McArthur, M. Saari, G.A. Heckman, N. Wellens, J. Weir, P. Hebert, L. Turcotte, J. Jbilou, J.P. Hirdes, Evaluating the Effect of COVID-19 Pandemic Lockdown on Long-Term Care Residents' Mental Health: A Data-Driven Approach in New Brunswick, *J Am Med Dir Assoc* 22(1) (2021) 187-192. <http://doi.org/10.1016/j.jamda.2020.10.028>
- [34] A. Renzi, W. Verrusio, A. Evangelista, M. Messina, F. Gaj, M. Cacciafesta, Using drawings to express and represent one's emotional experience during the coronavirus disease 2019 pandemic: a case report of a woman living in a nursing home, *Psychogeriatrics* 21(1) (2021) 118-120. <http://doi.org/10.1111/psyg.12638>
- [35] L.I. van Dyck, K.M. Wilkins, J. Ouellet, G.M. Ouellet, M.L. Conroy, Combating Heightened Social Isolation of Nursing Home Elders: The Telephone Outreach in the COVID-19 Outbreak Program, *Am J Geriatr Psychiatry* 28(9) (2020) 989-992. <http://doi.org/10.1016/j.jagp.2020.05.026>
- [36] E.E. Office, M.S. Rodenstein, T.S. Merchant, T.R. Pendergrast, L.A. Lindquist, Reducing Social Isolation of Seniors during COVID-19 through Medical Student Telephone Contact, *J Am Med Dir Assoc* 21(7) (2020) 948-950. <http://doi.org/10.1016/j.jamda.2020.06.003>
- [37] L. Ayalon, S. Avidor, "We have become prisoners of our own age": From a continuing care retirement community to a total institution in the midst of the COVID-19 outbreak, *Age Ageing* (2021). <http://doi.org/10.1093/ageing/afab013>
- [38] J.K. Monin, T. Ali, S. Syed, A. Piechota, M. Lepore, C. Mourgues, J.E. Gaugler, R. Marottoli, D. David, Family Communication in Long-Term Care During a Pandemic: Lessons for Enhancing Emotional Experiences, *Am J Geriatr Psychiatry* 28(12) (2020) 1299-1307. <http://doi.org/10.1016/j.jagp.2020.09.008>
- [39] R. Leontjevas, I.A.H. Knippenberg, M. Smalbrugge, A.O.A. Plouvier, S. Teunisse, C. Bakker, R. Koopmans, D.L. Gerritsen, Challenging behavior of nursing home residents during COVID-19 measures in the Netherlands, *Aging Ment Health* (2020) 1-6. <http://doi.org/10.1080/13607863.2020.1857695>
- [40] H.G. Van der Roest, M. Prins, C. van der Velden, S. Steinmetz, E. Stolte, T.G. van Tilburg, D.H. de Vries, The Impact of COVID-19 Measures on Well-Being of Older Long-Term Care Facility Residents in the Netherlands, *J Am Med Dir Assoc* 21(11) (2020) 1569-1570. <http://doi.org/10.1016/j.jamda.2020.09.007>
- [41] S. Mo, J. Shi, D. Truxillo, The Psychological Consequences of the COVID-19 on Residents and Staff in Nursing Homes, *Work, Aging and Retirement* 6(4) (2020) 254-259. <http://doi.org/10.1093/workar/waaa021>
- [42] M. Nyashanu, F. Pfende, M. Ekpenyong, Exploring the challenges faced by frontline workers in health and social care amid the COVID-19 pandemic: experiences of frontline workers in the English Midlands region, UK, *J Interprof Care* 34(5) (2020) 655-661. <http://doi.org/10.1080/13561820.2020.1792425>
- [43] M. Nyashanu, F. Pfende, M.S. Ekpenyong, Triggers of mental health problems among frontline healthcare workers during the COVID-19 pandemic in private care homes and domiciliary care agencies: Lived experiences of care workers in the Midlands region, UK, *Health Soc Care Community* (2020). <http://doi.org/10.1111/hsc.13204>
- [44] A. Senczyszyn, K.M. Lion, D. Szczesniak, E. Trypka, J. Mazurek, M. Ciulkowicz, M. Mackowiak, M. Duda-Sikula, R. Wallner, J. Rymaszewska, Mental Health Impact of SARS-COV-2 Pandemic on Long-Term Care Facility Personnel in Poland, *J Am Med Dir Assoc* 21(11) (2020) 1576-1577. <http://doi.org/10.1016/j.jamda.2020.09.020>
- [45] L. Leskovic, K. Erjavec, R. Leskovic, G. Vukovic, Burnout and job satisfaction of healthcare workers in Slovenian nursing homes in rural areas during the COVID-19 pandemic, *Ann Agric Environ Med* 27(4) (2020) 664-671. <http://doi.org/10.26444/aaem/128236>
- [46] L.M. Blanco-Donoso, J. Moreno-Jimenez, A. Amutio, L. Gallego-Alberto, B. Moreno-Jimenez, E. Garrosa, Stressors, Job Resources, Fear of Contagion, and Secondary Traumatic Stress Among Nursing Home Workers in Face of the COVID-19: The Case of Spain, *J Appl Gerontol* 40(3) (2021) 244-256. <http://doi.org/10.1177/0733464820964153>
- [47] M. Riello, M. Purgato, C. Bove, D. MacTaggart, E. Rusconi, Prevalence of post-traumatic symptomatology and anxiety among residential nursing and care home workers following the first COVID-19 outbreak in Northern Italy, *R Soc Open Sci* 7(9) (2020) 200880. <http://doi.org/10.1098/rsos.200880>
- [48] A. Frahsa, D. Altmeier, J.M. John, H. Gropper, H. Granz, R. Pomiersky, D. Haigis, G.W. Eschweiler, A.M. Niess, G. Sudeck, A. Thiel, "I Trust in Staff's Creativity"-The Impact of COVID-19 Lockdowns on Physical Activity Promotion in Nursing Homes Through the Lenses of Organizational Sociology, *Front Sports Act Living* 2 (2020) 589214. <http://doi.org/10.3389/fspor.2020.589214>

- [49] S.L. Hofschulte-Beck, S.E. Hickman, J.L. Blackburn, L.M. Mack, K.T. Unroe, Attitudes and Experiences of Frontline Nursing Home Staff Toward Coronavirus Testing, *J Am Med Dir Assoc* 22(1) (2021) 215-217. <http://doi.org/10.1016/j.jamda.2020.11.001>
- [50] Y. Liang, J. Xu, Crisis response of nursing homes during COVID-19: Evidence from China, *International Review of Economics & Finance* 72 (2021) 700-710. <http://doi.org/10.1016/j.iref.2020.12.024>
- [51] R. Gharpure, A. Patel, R. Link-Gelles, First-Dose COVID-19 Vaccination Coverage Among Skilled Nursing Facility Residents and Staff, *JAMA* (2021). <http://doi.org/10.1001/jama.2021.2352>
- [52] K.T. Unroe, R. Evans, L. Weaver, D. Rusyniak, J. Blackburn, Willingness of Long-Term Care Staff to Receive a COVID-19 Vaccine: A Single State Survey, *J Am Geriatr Soc* (2020). <http://doi.org/10.1111/jgs.17022>
- [53] K.S. McGilton, A. Krassikova, V. Boscart, S. Sidani, A. Iaboni, S. Vellani, A. Escrig-Pinol, Nurse Practitioners Rising to the Challenge During the COVID-19 Pandemic in Long-Term Care Homes, *Gerontologist* (2021). <http://doi.org/10.1093/geront/gnab030>
- [54] R.H. Cox, D. Dickson, P. Marier, Resistance, Innovation, and Improvisation: Comparing the Responses of Nursing Home Workers to the COVID-19 Pandemic in Canada and the United States, *Journal of Comparative Policy Analysis: Research and Practice* 23(1) (2020) 41-50. <http://doi.org/10.1080/13876988.2020.1846994>
- [55] F. Marshall, A. Gordon, J.R.F. Gladman, S. Bishop, Care homes, their communities, and resilience in the face of the COVID-19 pandemic: interim findings from a qualitative study, *BMC Geriatr* 21(1) (2021) 102. <http://doi.org/10.1186/s12877-021-02053-9>
- [56] F.A. Hughes, Reflections of a Nursing Leader During an Extraordinary Time of Aged Care in New Zealand, *J Gerontol Nurs* 46(12) (2020) 3-6. <http://doi.org/10.3928/00989134-20201106-01>
- [57] The response to COVID-19 in aged care - Sydney hearing 2, Royal Commission into Aged Care Quality and Safety, 2020. <https://agedcare.royalcommission.gov.au/hearings-and-workshops/sydney-hearing-2>
- [58] L.A.S.A. (LASA), Aged Care COVID-19 Survey Results; Residential Aged Care Operations 11th May 2020, 2020. file:///C:/Users/sfraser/Downloads/RC-Operations-Survey-Report_Final_110520%20(1).pdf
- [59] B. Plagg, A. Engl, G. Piccoliori, K. Eisendle, Prolonged social isolation of the elderly during COVID-19: Between benefit and damage, *Arch Gerontol Geriatr* 89 (2020) 104086. <http://doi.org/10.1016/j.archger.2020.104086>
- [60] C. Douglas, A World of Touch in a No-Touch Pandemic, *Anthropology in Action* 28(1) (2021) 8-15. <http://doi.org/10.3167/aia.2021.280102>
- [61] K. Liddell, A. Ruck Keene, A. Holland, J. Huppert, B.R. Underwood, O. Clark, S.I.G. Barclay, Isolating residents including wandering residents in care and group homes: Medical ethics and English law in the context of Covid-19, *Int J Law Psychiatry* 74 (2021) 101649. <http://doi.org/10.1016/j.ijlp.2020.101649>
- [62] N.M. Stall, J. Johnstone, A.J. McGeer, M. Dhuper, J. Dunning, S.K. Sinha, Finding the Right Balance: An Evidence-Informed Guidance Document to Support the Re-Opening of Canadian Nursing Homes to Family Caregivers and Visitors during the Coronavirus Disease 2019 Pandemic, *J Am Med Dir Assoc* 21(10) (2020) 1365-1370 e7. <http://doi.org/10.1016/j.jamda.2020.07.038>
- [63] E.M. Sizoo, A.A. Monnier, M. Bloemen, C. Hertogh, M. Smalbrugge, Dilemmas With Restrictive Visiting Policies in Dutch Nursing Homes During the COVID-19 Pandemic: A Qualitative Analysis of an Open-Ended Questionnaire With Elderly Care Physicians, *J Am Med Dir Assoc* 21(12) (2020) 1774-1781 e2. <http://doi.org/10.1016/j.jamda.2020.10.024>
- [64] S. Feder, D. Smith, H. Griffin, S.T. Shreve, D. Kinder, A. Kutney-Lee, M. Ersek, "Why Couldn't I Go in To See Him?" Bereaved Families' Perceptions of End-of-Life Communication During COVID-19, *J Am Geriatr Soc* (2020). <http://doi.org/10.1111/jgs.16993>
- [65] M.Y. Yen, J. Schwartz, C.C. King, C.M. Lee, P.R. Hsueh, P. Society of Taiwan Long-term Care Infection, Control, Recommendations for protecting against and mitigating the COVID-19 pandemic in long-term care facilities, *J Microbiol Immunol Infect* 53(3) (2020) 447-453. <http://doi.org/10.1016/j.jmii.2020.04.003>
- [66] J.D. Wammes, M.D. Kolk, J.H. van den Besselaar Md, D.J. MacNeil-Vroomen Ph, B.M. Buurman-van Es Rn, D.M. van Rijn Ph, Evaluating Perspectives of Relatives of Nursing Home Residents on the Nursing Home Visiting Restrictions During the COVID-19 Crisis: A Dutch Cross-Sectional Survey Study, *J Am Med Dir Assoc* 21(12) (2020) 1746-1750 e3. <http://doi.org/10.1016/j.jamda.2020.09.031>
- [67] C.K. Shum, Y.F. Shea, M. Tang, W.H. Wan, M.M.K. Chan, Poor feeding due to visitor restrictions in long-term care facilities during the coronavirus disease 2019 pandemic, *Psychogeriatrics* 20(6) (2020) 929-930. <http://doi.org/10.1111/psyg.12623>
- [68] Gilbert L., Review of Dorothy Henderson Lodge COVID-19 Outbreak, 2020.
- [69] R.M. Lynch, R. Goring, Practical Steps to Improve Air Flow in Long-Term Care Resident Rooms to Reduce COVID-19 Infection Risk, *J Am Med Dir Assoc* 21(7) (2020) 893-894. <http://doi.org/10.1016/j.jamda.2020.04.001>

- [70] S.M. Dyer, D. Tilden, M. Valeri, S. Judd, M. Crotty, Is a pandemic another reason the additional capital cost of home-like clustered domestic residential aged care homes is justified?, *Age Ageing* 49(6) (2020) 928-929. <http://doi.org/10.1093/ageing/afaa190>
- [71] S. Zimmerman, C. Dumond-Stryker, M. Tandan, J.S. Preisser, C.J. Wretman, A. Howell, S. Ryan, Nontraditional Small House Nursing Homes Have Fewer COVID-19 Cases and Deaths, *J Am Med Dir Assoc* 22(3) (2021) 489-493. <http://doi.org/10.1016/j.jamda.2021.01.069>
- [72] R. Waters, The Big Idea Behind A New Model Of Small Nursing Homes, *Health Aff (Millwood)* 40(3) (2021) 378-383. <http://doi.org/10.1377/hlthaff.2021.00081>
- [73] H.R. Abrams, L. Loomer, A. Gandhi, D.C. Grabowski, Characteristics of U.S. Nursing Homes with COVID-19 Cases, *J Am Geriatr Soc* 68(8) (2020) 1653-1656. <http://doi.org/10.1111/jgs.16661>
- [74] P. Chatterjee, S. Kelly, M. Qi, R.M. Werner, Characteristics and Quality of US Nursing Homes Reporting Cases of Coronavirus Disease 2019 (COVID-19), *JAMA Netw Open* 3(7) (2020) e2016930. <http://doi.org/10.1001/jamanetworkopen.2020.16930>
- [75] M.J. McGregor, C. Harrington, COVID-19 and long-term care facilities: Does ownership matter?, *CMAJ* 192(33) (2020) E961-E962. <http://doi.org/10.1503/cmaj.201714>
- [76] N.M. Stall, A. Jones, K.A. Brown, P.A. Rochon, A.P. Costa, For-profit long-term care homes and the risk of COVID-19 outbreaks and resident deaths, *CMAJ* 192(33) (2020) E946-E955. <http://doi.org/10.1503/cmaj.201197>
- [77] Y. Li, X. Cen, X. Cai, H. Temkin-Greener, Racial and Ethnic Disparities in COVID-19 Infections and Deaths Across U.S. Nursing Homes, *J Am Geriatr Soc* 68(11) (2020) 2454-2461. <http://doi.org/10.1111/jgs.16847>
- [78] J.S.P. Tulloch, R. Green, C. Tunnah, E. Coffey, M. Ashton, S. Ghebrehewet, COVID-19 outbreaks in care homes during the first wave: Are Care Quality Commission ratings a good predictor of at risk homes?, *J Hosp Infect* (2021). <http://doi.org/10.1016/j.jhin.2020.12.023>
- [79] M. He, Y. Li, F. Fang, Is There a Link between Nursing Home Reported Quality and COVID-19 Cases? Evidence from California Skilled Nursing Facilities, *J Am Med Dir Assoc* 21(7) (2020) 905-908. <http://doi.org/10.1016/j.jamda.2020.06.016>
- [80] J. Bowlblis, R. Applebaum, Prevalence of COVID-19 in Ohio Nursing Homes: What's Quality Got to Do with It?, *J Aging Soc Policy* (2020) 1-17. <http://doi.org/10.1080/08959420.2020.1824542>
- [81] J.F. Figueroa, R.K. Wadhera, I. Papanicolas, K. Riley, J. Zheng, E.J. Orav, A.K. Jha, Association of Nursing Home Ratings on Health Inspections, Quality of Care, and Nurse Staffing With COVID-19 Cases, *JAMA* 324(11) (2020) 1103-1105. <http://doi.org/10.1001/jama.2020.14709>
- [82] M.M. Sugg, T.J. Spaulding, S.J. Lane, J.D. Runkle, S.R. Harden, A. Hege, L.S. Iyer, Mapping community-level determinants of COVID-19 transmission in nursing homes: A multi-scale approach, *Sci Total Environ* 752 (2021) 141946. <http://doi.org/10.1016/j.scitotenv.2020.141946>
- [83] A.M. Bach-Mortensen, M. Degli Esposti, Is area deprivation associated with greater impacts of COVID-19 in care homes across England? A preliminary analysis of COVID-19 outbreaks and deaths, *J Epidemiol Community Health* (2021). <http://doi.org/10.1136/jech-2020-215039>
- [84] J. Blackburn, L. Weaver, L. Cohen, N. Menachemi, D.E. Rusyniak, K.T. Unroe, Community Coronavirus Disease 2019 Activity Level and Nursing Home Staff Testing for Active Severe Acute Respiratory Syndrome Coronavirus 2 Infection in Indiana, *J Am Med Dir Assoc* 22(1) (2021) 204-208 e1. <http://doi.org/10.1016/j.jamda.2020.10.038>
- [85] J. Greene, D.M. Gibson, Workers at long-term care facilities and their risk for severe COVID-19 illness, *Prev Med* 143 (2021) 106328. <http://doi.org/10.1016/j.ypmed.2020.106328>
- [86] R.J. Gorges, R.T. Konetzka, Factors Associated With Racial Differences in Deaths Among Nursing Home Residents With COVID-19 Infection in the US, *JAMA Netw Open* 4(2) (2021) e2037431. <http://doi.org/10.1001/jamanetworkopen.2020.37431>
- [87] S.M. Shi, I. Bakaev, H. Chen, T.G. Trivison, S.D. Berry, Risk Factors, Presentation, and Course of Coronavirus Disease 2019 in a Large, Academic Long-Term Care Facility, *J Am Med Dir Assoc* 21(10) (2020) 1378-1383 e1. <http://doi.org/10.1016/j.jamda.2020.08.027>
- [88] J.E. Ibrahim, Royal Commission into Aged Care Quality and Safety: the key clinical issues, *Medical Journal of Australia* 210(10) (2019) 439-441.e1. <http://doi.org/https://doi.org/10.5694/mja2.50168>
- [89] K. Eagar, A. Westera, C. Kobel, Australian residential aged care is understaffed, *Med J Aust* 212(11) (2020) 507-508 e1. <http://doi.org/10.5694/mja2.50615>

Appendix A

Table 1. Australian published research literature on COVID-19 in residential aged care homes.

Reference	Aims	Setting/ data source	Sample/ participants	Method	Findings	Conclusions/ Recommendations	Funding	Conflict of interest	Limitations
Burkett, E., Carpenter, C. R., Hullick, C., Arendts, G., & Ouslander, J. G. (2021). It's time: Delivering optimal emergency care of residents of aged care facilities in the era of COVID-19. <i>Emergency Medicine Australasia</i> , 33(1), 131–137. https://doi.org/10.1111/1742-6723.13683	To provide guidelines around managing the admissions of RACF residents to emergency departments, from an EC perspective	Not an empirical study	Commentary	Commentary	Considerations for admitting aged care residents to EDs include the increased risk of infection, the unsuitability of EDs for aged care residents, communication between RACFs and EDs, risk of isolation when residents return to RACFs.	Risk assessment processes should be in place before residents are admitted to EDs based on suspected COVID-19. There also needs to be protocols of communication between RACFs and EDs, to ensure continuity of care, including of medication.	Not stated	Not stated	This is a discussion piece and is not specific to the Australian context.
Drummond, D. A., & Carey, L. B. (2020). Chaplaincy and Spiritual Care Response to COVID-19: An Australian Case Study – The McKellar Centre. <i>Health and Social Care Chaplaincy</i> , 8(2). https://doi.org/10.1558/HSCC.41243	To describe how chaplains adapted to a pandemic situation, when they were no longer able to attend RACFs on-site.	One aged care service in Geelong, VIC	Personal reflections	Personal reflection	Chaplaincies used remote communication technologies during lockdown, but lack of physical presence affected their work.	Lockdowns have increased social isolation of residents, and made it more challenging for chaplains to offer spiritual care at a time when it is important.	Not stated	Not stated	Based on the author's personal recollection and written early in the pandemic. Does not suggest best practices.
Simard, J., & Volicer, L. (2020). Loneliness and Isolation in Long-term Care and the COVID-19 Pandemic. <i>Journal of the American Medical Directors Association</i> , 21(7), 966–967. https://doi.org/10.1016/j.jamda.2020.05.006	Editorial, no aims stated	Long Term Care Facilities	Commentary	Commentary	Social isolation is especially difficult for people living in nursing homes and assisted living communities during lockdown. Activities have been cancelled and, in many facilities, residents are eating in their rooms, as all communal dining has been stopped.	Authors give nine recommendations/ideas for decreasing loneliness of residents, with little to no cost staffing wise. E.g. name tags, iPads with video capability to call family, visits at windows etc.	Not stated	Not stated	These recommendations are evidence informed, but require evaluation.

					External visitors are also prohibited. There is need to balance harm of isolation against risk of infection				
Aitken, G. E., Holmes, A. L., & Ibrahim, J. E. (2021). COVID-19 and residential aged care: priorities for optimising preparation and management of outbreaks. <i>The Medical Journal of Australia</i> , 214(1), 6–8.e1. https://doi.org/10.5694/mja2.50892	To provide recommendations for improving the preparedness of residential aged care facilities in dealing with future COVID-19 outbreaks.	Residential aged care facilities	Health/aged care experts in Victoria	Consultations	RACFs should implement: 1. Outbreak contingency plans in consultation with local health providers 2. Training of staff in ICP and contingency plans 3. Identify and support staff who can be relied upon to work during an outbreak	These recommendations should be implemented in a centralized way consistently across the sector	Supported by Ballarat Health Service and the Department of Forensic Medicine, Monash University.	Not stated	Lack of clarity about the sample, including how they were accessed, and how the different perspectives were synthesised.
Gilbert, G.L. (2020), COVID-19 in a Sydney nursing home: a case study and lessons learnt. <i>The Medical Journal of Australia</i> , 213: 393-396.e1. https://doi.org/10.5694/mja2.50817	To describe lessons learned from the Henderson lodge outbreak of COVID-19 in March 2020.	A case study of an individual site	Care report Staff and residents of Henderson lodge.	Case report	A lack of ICP training and preparedness likely contributed to the outbreak. However, isolation of infected residents slowed down the spread. 6 weeks of isolation had a harmful effect on residents	The following lessons were learnt from existing cases: Need for expert leadership, ICP training for staff, consistent contingency plans, immediate comprehensive testing of whole facility and staff a case, proactive support from allied health for social, emotional, nutritional and other needs to minimize impact of isolation during outbreaks, hospital admissions managed care-by-case.	Supported by the Commonwealth Dept of Health	Not stated	Researchers recommendations are based on a single outbreak at one site, which occurred early in the course of the pandemic.

Gnanasambantham, K., Aitken, G., Morris, B., Simionato, J., Chua, E. H., & Ibrahim, J. E. (2020). Developing a clinical screening tool for identifying COVID-19 infection in older people dwelling in residential aged care services. <i>Australasian journal on ageing</i> . https://doi.org/10.1111/ajag.12884	To develop and conduct preliminary testing of a COVID-19 screening tool for early identification of infection among people residing in aged care homes.	State of Victoria	Peer review participants: 10 clinicians (5 male, 5 female) Feasibility and usability participants: 6 aged care nurses (all female)	Literature review, qualitative interviews	Participants agreed the tool needed to be as simple as possible for it to be taken up across Victoria. Participants also agreed to weighted toward sensitivity over specificity, even if this meant broadening to clinical criteria beyond what's recommended elsewhere.	Authors recommend piloting their tool across Victoria and conducting Delphi studies to further refine it.	Supported by Ballarat Health Service, Department of Forensic Medicine (Monash), Care Safer Victoria.	Not stated	Peer review conducted using convenience sample with limited number of peers, as was the feasibility and usability.
Ibrahim, J. E. (2020). COVID-19 and residential aged care in Australia. <i>AJAN - The Australian Journal of Advanced Nursing</i> , 37(3). https://doi.org/10.37464/2020.373.226	To describe governance, workforce, models of care, evaluation including the use of data and, resources and infrastructure in relation to COVID-19 in aged care.	Australia, Aged Care	Commentary	Commentary	Author argues effective decision making was happened during outbreaks in aged care by divisions between health and aged care. He also notes that the COVID-19 pandemic has highlighted workforce issues, particularly a lack of surge capacity.	The author claimed that COVID-19 has only further demonstrated the need for significant reforms in aged care. Particularly regarding governance and staff skills.	Supported by Ballarat Health Service, Victoria, Australia and the Department of Forensic Medicine, Monash University.	The author is employed by the Ballarat Health Service, and, Department of Forensic Medicine, Monash University	A commentary based on one expert's opinions. Evaluation of any implemented recommendations is required.

Viray, P., Low, Z., Sinnappu, R., Harvey, P. A., & Brown, S. (2021). Residential aged care facility COVID-19 outbreaks and magnitude of spread among residents: observations from a Victorian residential in-reach service. <i>Internal Medicine Journal</i> , 51(1), 99–101. https://doi.org/10.1111/imj.15143	To describe a case series of COVID-19 outbreaks in six RACF.	Residential Aged Care Facilities	Six Victorian RACF outbreaks their Residential in reach service was involved with.	Case series. The authors collected data on the cumulative proportion of residents who tested positive for COVID-19 within 21 days of the index case being identified. They describe the observations of a Residential In-Reach service within these six RACF	Article discusses issues and strategies relating to the control COVID-19 in RACFs, including: Condition of facilities, hospital transfers, PPE availability and ICP awareness, the use of aerosol protection (N95 masks), embedded infection prevention control staff, , outbreak contingency planning, the speed of cohorting cases of infection.	Ultimately, the factors described above can be planned for. The facilities with an established COVID-19 outbreak plan that was confidently and promptly enacted were observed to have the lowest magnitude of spread	Not stated	Not stated	External variables, such as levels of COVID-19 in the local community, remain outside the scope of the study, but are influential on the outcome.
Zheng, A., Govindasamy, L. S., Thomas, J., Branley, J., Craig, A. T., & Douglas, M. (2021). Lessons from a successful public health response to COVID-19 in a New South Wales residential aged care facility, 2020. <i>Australian and New Zealand Journal of Public Health</i> , 45(1), 13–16. https://doi.org/10.1111/1753-6405.13077	To elucidate broader lessons on controlling COVID-19 in facilities from one case of a positive test in a RACF worker.	Residential Aged Care Facilities	A commentary on one RACF and the positive COVID test of a healthcare worker working at the facility.	Case report	The response was well "implemented". Authors note rigorous pandemic preparedness at the RACF; immediate exclusion and testing of symptomatic RACF staff; a prompt response with closely monitored IPC procedures; frequent assessments of asymptomatic patients and staff; effective communications with stakeholders and other response agencies.	"This case study offers insight into the impact that effective preparedness and public health response had on the implementation of a COVID-19 response in an RACF from which others may learn. Looking ahead, lessons for COVID-19 outbreaks in RACFs should be collected and analysed to inform best practice guidelines and regulatory frameworks to better protect the health of both residents and staff."	Not stated	Not stated	Extrapolation from a single positive case limits generalization. The single case only worked during the pre-symptomatic period.

McGilton, K. S., Escrig-Pinol, A., Gordon, A., Chu, C. H., Zúñiga, F., Sanchez, M. G., Boscart, V., Meyer, J., Corazzini, K. N., Jacinto, A. F., Spilsbury, K., Backman, A., Scales, K., Fagertun, A., Wu, B., Edvardsson, D., Lepore, M. J., Leung, A., Siegel, E. O., Noguchi-Watanabe, M., ... Bowers, B. (2020). Uncovering the Devaluation of Nursing Home Staff During COVID-19: Are We Fuelling the Next Health Care Crisis?. <i>Journal of the American Medical Directors Association</i> , 21(7), 962–965. https://doi.org/10.1016/j.jamda.2020.06.010	To articulate considerations for supporting staff in nursing homes, consideration for improving infection control and prevention strategies in nursing homes, to advocate for better staffing levels in nursing homes globally.	Residential care facilities housing people living with dementia	Commentary	Commentary	The paper offers recommendations from an international community of researchers, and considers existing guidelines for infection control and prevention.	Aged care workers are invaluable members of society and work in care environments in which many others are unwilling to work, and should be recognized as such. The pandemic has also highlighted the importance of strong leadership in RACF environments.	Not stated	Not stated	Addressing workforce issues requires different strategies depending on the particular aged care system. This study is too broadly international to offer specific policy recommendation.
Jones, K. F., Washington, J., Kearney, M. & Best, M. C. (2020). Responding to the “unknown assailant”: A qualitative exploration with Australian health and aged care chaplains on the impact of COVID-19, <i>Journal of Health Care Chaplaincy</i> , http://doi.org/10.1080/08854726.2020.1861536	“To consider the impact of COVID-19 from the perspective of Australian chaplains”.	17 Australian Chaplains working in aged care.	17 Chaplains, from five states in AU (no western au, northern, ACT), 64.7% female	Qualitative interviews	Changes to visitor access and reduction in vulnerable or non-essential staff meant chaplains were restricted from face to face contact. Chaplains reported fear, isolation and disconnection among their clients. Chaplains provided a calming presence, and introduced creative ways to provide spiritual care.	Chaplains providing a calming presence, and support people during crises, with creativity, and hope. Chaplains need to be supported and recognized by management to best fulfil their role.	Funded by St Vincent's Health Australia and the University of Notre Dame Australia.,	Not stated	Limited to the experience of chaplains. The range of religious and ethnic backgrounds in the study were limited.
Wise, S. (2020) Staffing policy in aged care must look beyond the numbers. <i>Australian Health Review</i> 44, 829-830. https://doi.org/10.1071/AH20312	The author argues that staffing levels and skill mix in aged care have declined, whereas the health and social needs of an older and more clinically complex population have risen. She advocates for increasing staff and improving personal care workers' skills and education,	Residential Aged Care Facilities	Commentary	Commentary	Perspective piece. Most are framed as conclusions	The article argues that individualized funding has led to a degradation of workforce conditions and a lower skillsets among staff. The author argues that in order to improve quality care, improving workforce conditions must be the priority.	Not stated	Not stated	To evaluate the article's claims, an international comparison of aged care finance models would be required.

	framing these as essential steps to quality aged care in Australia, but does not think this will not be possible without funding models that foster secure employment, development opportunities and long-term career pathways.								
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Appendix B

Table 2. Australian grey literature on COVID-19 in residential aged care homes.

Reference	Aims	Setting/ data source	Sample/ participants	Method	Findings	Conclusions/ Recommendations	Funding	Conflict of interest	Limitations
Australian Nursing and Midwifery Federation (ANMF) – Federal Office. National COVID-19 in Aged Care Survey [Internet]. Australian Nursing and Midwifery Federation (ANMF) – Federal Office. June 2020. Available online: http://www.anmf.org.au/documents/reports/ANMFAgedCareCOVID19Survey2020_FinalReport.pdf	To survey members with regards to issues confronted in relation to staffing during the COVID-19 pandemic	Aged care workers	1513 aged care workers across Australia	Survey	Almost half felt unprepared for pandemic, 26% reported no updated COVID plan, 46% reported insufficient PPE, 26% and 30% reported no training regards to PPE or infection control respectively.	Australia's aged care sector is indisputably understaffed and the workers who are there are in many cases doing the best they can with little support, few resources, and limited recognition by providers and more broadly within the public domain.	Not stated	Not stated	Survey completion figures for each component not provided
Dementia Australia. One Day the Support was Gone – The mental health impact of COVID-19 on people living with dementia, their families and carers Available online: https://www.dementia.org.au/sites/default/files/2020-11/PFOD-Discussion-Paper-Nov-2020-ver1.pdf	Discussion paper providing recommendations to support people living with dementia during COVID-19.	Not an empirical Study	N/A	Discussion Paper	COVID-19 has had a severe impact on people living with dementia. The physical distancing, restrictions and lockdown measures have impacted on the physical, social and mental wellbeing of people living with dementia, as well as those caring for them.	Of the 14 recommendations outlined, 2 are directed towards residential aged care homes. 1/ aged care providers are supported with information and training about the COVID-19 support line for Senior Australians and are equipped with the skills to identify people living with dementia, their families and carers who could benefit from the service. 2/ Adequate staffing to facilitate continued visits to people living with dementia in RACH.	Not stated	Not stated	N/A
Leading Age Services Australia (LASA). Aged Care COVID-19 Survey Results; Residential Aged Care Operations 11 th May 2020 Available online: https://lasa.asn.au/wp-content/uploads/2020/05/RC-Operations-Survey-Report_Final_110520.pdf	Survey residential aged care providers with regards to modifications to their standard operations	Residential Aged Care Facilities	79 Residential Aged Care Facilities representing 12020 residents	Survey	89% of RACH imposed restrictions on family visitation of residents. Employees (92%), residents (82%) and families (90%) agreed with RACH handling of COVID-19. 85% of RACH reported no issues	No conclusions or recommendations are provided	Not stated	Not stated	Representation concentrated on Vic (43%), Qld (28%) and NSW (25%).

					transferring residents to hospital if required.				
Leading Age Services Australia (LASA). COVID-19 Lessons Learned for Age Service Providers Available online: file:///C:/Users/sfraser/Downloads/COVID-19-Lessons-Learned-v6%20(4).pdf	To capture the learnings of dealing with a pandemic on the scale of COVID-19.	Not an empirical study	N/A	Report	Numerous recommendations for aged care providers in Planning and preparedness, response to outbreak and recovery post outbreak.	There is little modern precedent on which aged care providers can rely to guide them through COVID-19 pandemic. Learning as we tackle each circumstance is vital to ensure that all providers are as prepared as possible for future pandemics.	Not stated	Not stated	N/A
Royal Commission into Aged Care Quality and Safety. Aged Care and COVID-19: a special report. Available online: https://agedcare.royalcommission.gov.au/publications/aged-care-and-covid-19-special-report	To report on the proceeding regarding the challenges faced by aged care providers in response to COVID-19.	Submissions and meeting proceedings	N/A	Report	Greatest challenge to Australia's aged care sector. Residents endured months of isolation which has had terrible effect on their physical, mental and emotional wellbeing.	Australian Government should fund providers to ensure adequate staff available to deal with external visitors to enable visits between residents and family. The Australian Government should create MBS items to increase the provision of allied health and mental health services to people living in residential aged care. Australian Government should publish a national aged care plan for COVID-19 and establish a national aged care advisory body Australian Government should arrange for the deployment of accredited infection prevention and control experts into residential aged care homes.	Commonwealth Dept. of Health	Not Stated	Testimony and submissions only heard across two hearings in Sydney

South Australia Health. COVID-19 Integrated Response Framework for the Management of multiple outbreaks in Residential Aged Care Facilities in South Australia. Available online: https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/resources/covid-19+integrated+response+framework+for+the+management+of+multiple+outbreaks+in+residential+aged+care+facilities+in+south+australia	To outline the SA integrated response, establish a blueprint guide to the collaborative roles and responsibilities of stakeholders, identify specific challenges, provide a model to inform sustainable preparedness	RACH in South Australia	N/A	Report	Success of SA's response is to: 1/ Maintain low community transmission 2/Develop the SA Aged care response centre 3/ Balance sustainable business practice with rapid response 4/ Connect COVID-19 protocols and worst case contingency planning into framework 5/ workforce enablement planning 6/ Define key roles 7/ Stress testing the response system	Development of a framework to provide an integrated response to manage multiple outbreaks in RACH.	SA Health	Not Stated	Framework is specific for the SA environment and policies.
Stewart Brown Advisory. Aged Care Financial Performance Survey – Aged Care Sector Report Available online: https://www.stewartbrown.com.au/images/documents/StewartBrown_-_ACFPS_Financial_Performance_Sector_Report_December_2020.pdf	Provision of detailed financial and supporting data for the aged care sector	Residential Aged Care Providers	1200 residential aged care facilities	Financial Survey Report	Decline in RACH occupancy. RACH homes running at an operating loss. Increase in the direct care costs	There is a need for urgent additional funding. Residential care is critically under-funded, both from a government and consumer perspective.	Not Stated	Professional relationships with the Department, Aged Care Financing Authority, peak bodies, provider organisations, aged care staff and aged care residents	
Gilbert, L., Lilly, A., Newmarch House COVID-19 outbreak [April-June 2020] Available online: https://www.health.gov.au/resources/publications/coronavirus-covid-19-newmarch-house-covid-19-outbreak-independent-review	Identify the learnings from the COVID-19 outbreak at Newmarch House	Newmarch House RACH	Staff, and family of residents with Anglicare and Newmarch House.	Case Report	Learnings around: Emergency Response, Leadership and management, Communication, workforce, IPAC, Medical and clinical care and the Family Experience	The potential for escalation of the outbreak was mitigated through the coordinated response by Anglicare and staff of Newmarch House.	Commonwealth Dept. of Health	Not Stated	No direct resident interviews

Gilbert L. Review of Dorothy Henderson Lodge COVID-19 Outbreak Available online: https://www.health.gov.au/resources/publications/coronavirus-covid-19-review-of-dorothy-henderson-lodge-covid-19-outbreak	Identify the learnings from the COVID-19 outbreak at Dorothy Henderson Lodge	Dorothy Henderson Lodge	Staff, and family of residents with Dorothy Henderson Lodge	Case Report	Response of management and staff was prompt and thorough preventing a worse outcome. Spread of COVID-19 is very difficult to control in a household like residential setting. Half of the cases were probably already infected before containment measures were fully implemented. Balance between prolonged confinement and disease itself.	In addition to implementing guidelines, for prevention and management of COVID-19 outbreaks, consideration might be given to: 1/ ensuring that all residents have up-to-date advanced care directives; 2/ engaging an experienced IPC consultant to assist in developing an IPC plan, 3/ provide basic training in IPC and use of PPE for staff 4/ engaging a specialist, with experience in IPC and infectious diseases to assist in outbreak planning and implementation. 5/ providing ongoing regular (e.g. annual) staff IPC/PPE training	Commonwealth Dept. of Health	Not Stated	N/A
Gilbert L., Lilly A. Independent review of COVID-19 outbreaks at St. Basil's and Epping Gardens aged care facilities. Available online: https://www.health.gov.au/resources/publications/coronavirus-covid-19-independent-review-of-covid-19-outbreaks-at-st-basils-and-epping-gardens-aged-care-facilities	Identify the learnings from the COVID-19 outbreaks at St. Basils and Epping Gardens aged care facilities.	St Basils and Epping Gardens aged care facilities	Staff, residents and their families from St. Basils and Epping Gardens aged care facilities	Case Report	Emergency planning and preparedness was inadequate. Infection prevention and control capacity and capability were suboptimal. Leadership and effective management failed in response to the outbreak. There was inadequate surge workforce planning to cope with the scale of the outbreak. Communication between the facilities and government departments was suboptimal.	This review has highlighted some of the multiple factors at play in managing COVID-19 outbreaks and builds on the previous reviews. Whilst improvements have been observed and new lessons identified, there is an ongoing challenge to drive and embed consistent improvement across the aged care sector.	Commonwealth Dept. of Health	Not Stated	N/A

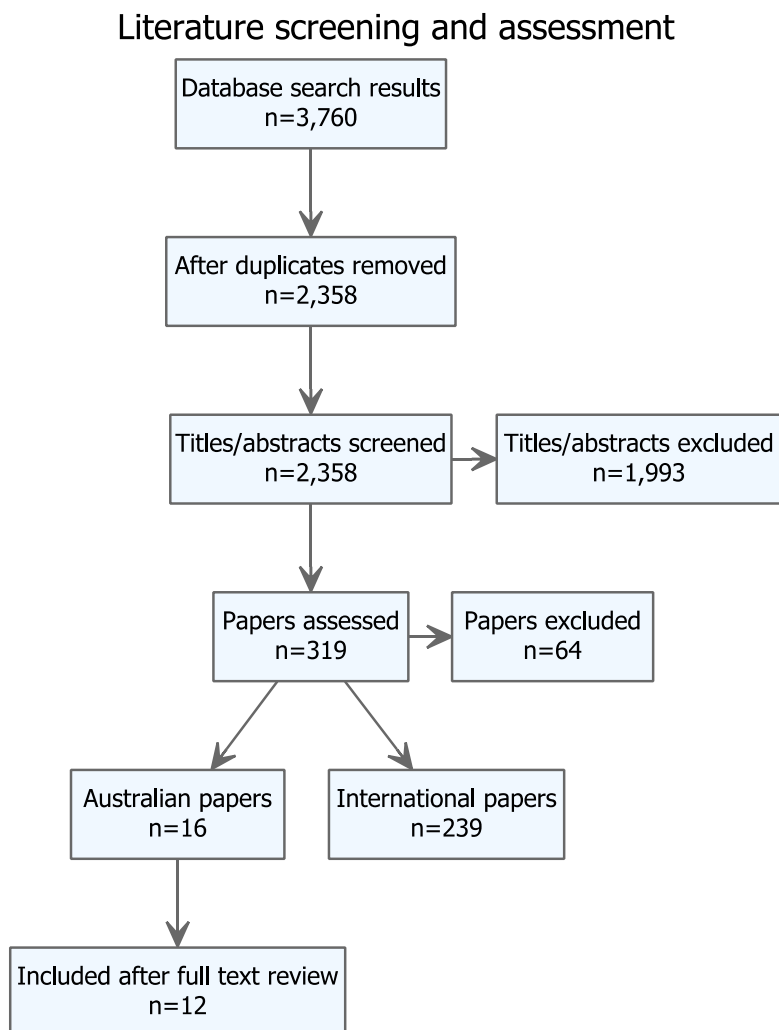
Appendix C

Table 3. Upcoming or ongoing studies on COVID-19 in residential aged care in Australia

CI	Institute	Title/Aims/URL	Status
Professor Beverly O'Connell	Edith Cowan University	To examine the effects of COVID-19 social distancing, lockdown and care delivery provided on the mental health and wellbeing of residents and their families in Residential Aged Care facilities (RACFs) and challenges and barriers experienced by RACF staff, and identify strategies used to manage the pandemic situation within RACF.	Under review by funding body
Professor Sunil Bhar	Swinburne University of Technology	The impact of COVID-19 on mental health of residential aged care residents and staff The study, which includes Mental Health Australia, the National Australian Research Institute, Queensland University and Macquarie University will be conducted via an online survey, which will be open for four weeks. The study will also explore which factors related to COVID-19 are having the greatest mental health impacts on aged care residents and staff, as well as what mental health support is needed. https://www.swinburne.edu.au/news/2020/09/covid-19-survey-mental-health-aged-care/	Ongoing
A/Prof Helen Rawson	Monash University / Melbourne Ageing Research Collaboration	EMBRACE - The impact of visitor restrictions to residential aged care homes on care partners during the COVID-19 pandemic To co-design an examination into the impact of restricted access to residential aged care facilities on care partners during the COVID-19 pandemic. https://www.nari.net.au/embrace	Ongoing
Professor Marion Eckert	University of South Australia; Australian Nursing and Midwifery Federation	The aim of this survey is to find out how nurses, midwives and personal care workers are feeling about their work, and how they have been impacted by COVID-19. https://research.unisa.edu.au/redcap/surveys/index.php?s=C3DRXDCFLF	Ongoing
Professor Gwendolyn L Gilbert	University of Sydney / Commonwealth Dept. of Health	Independent review of COVID-19 outbreaks in Australian residential aged care facilities	Ongoing
Professor David Paterson	University of Queensland / Australia Partnership for Preparedness Research on Infectious Disease Emergencies	Innovative tools to limit spread of SARS-CoV-2 in residential aged care facilities Undertake a randomised controlled trial to determine if "gamification" can result in behaviour change for healthcare workers in the residential aged care setting. Utilise our innovative platform of temporo-spatial mapping to aid public health efforts in control of SARS-CoV-2 in residential aged care facilities https://www.apprise.org.au/project/nhmrc-extends-apprise-funding-for-critical-covid-19-projects/	Ongoing
Associate Professor Sheena Sullivan	Australia Partnership for Preparedness Research on Infectious Disease Emergencies	The interaction between influenza and SARS-CoV-2 in nursing homes Compare outbreaks of SARS-CoV-2 (the COVID-19 virus) and influenza in aged care in terms of: a) Clinical outcomes of infection for residents of aged care facilities, b) The infection prevention and control measures implemented. https://www.apprise.org.au/project/the-interaction-between-influenza-and-sars-cov-2-in-nursing-homes/	Ongoing
	Occupational Therapy Australia	The research team, which represents multiple universities and healthcare organisations, and importantly includes frontline health care workers, is undertaking a research survey to investigate the extent of mental health, psychosocial and workplace issues experienced by frontline health workers during the COVID-19 pandemic. https://covid-19-frontline.com.au	Ongoing
Professor Karen Clark-Burg	Notre Dame University, Australia	The research team, led by Dean of Nursing and Midwifery Professor Karen Clark-Burg and including Professor Caroline Bulsara, Dr Cathryn Josif, and Jane Gaspar, will be investigating the delivery of models of care during the pandemic (March – June 2020), including any potential ways in which providing care has changed. https://www.notredame.edu.au/news-items/new-notre-dame-study-explores-the-delivery-of-aged-care-during-covid-19	Ongoing

Appendix D

Figure 1.



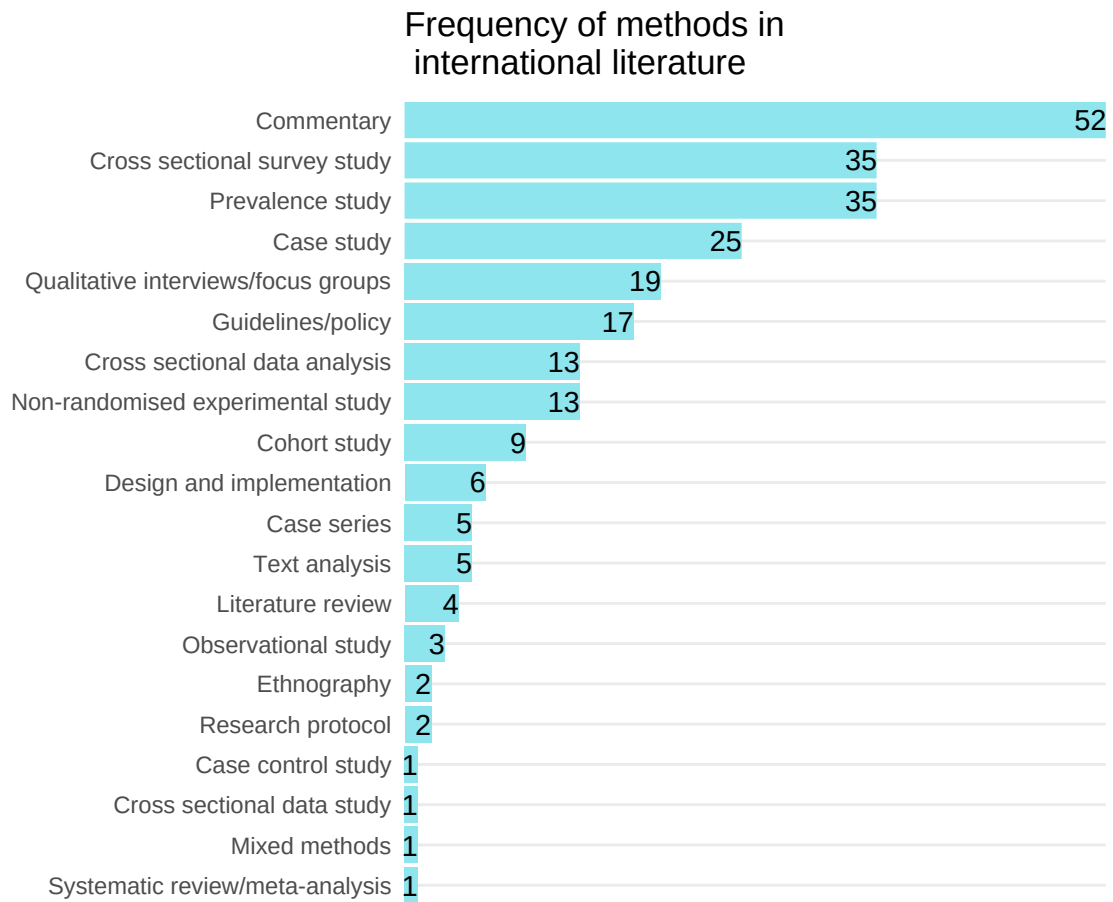
Appendix E

Figure 2.



Appendix F

Figure 3.



Appendix G

Figure 4.

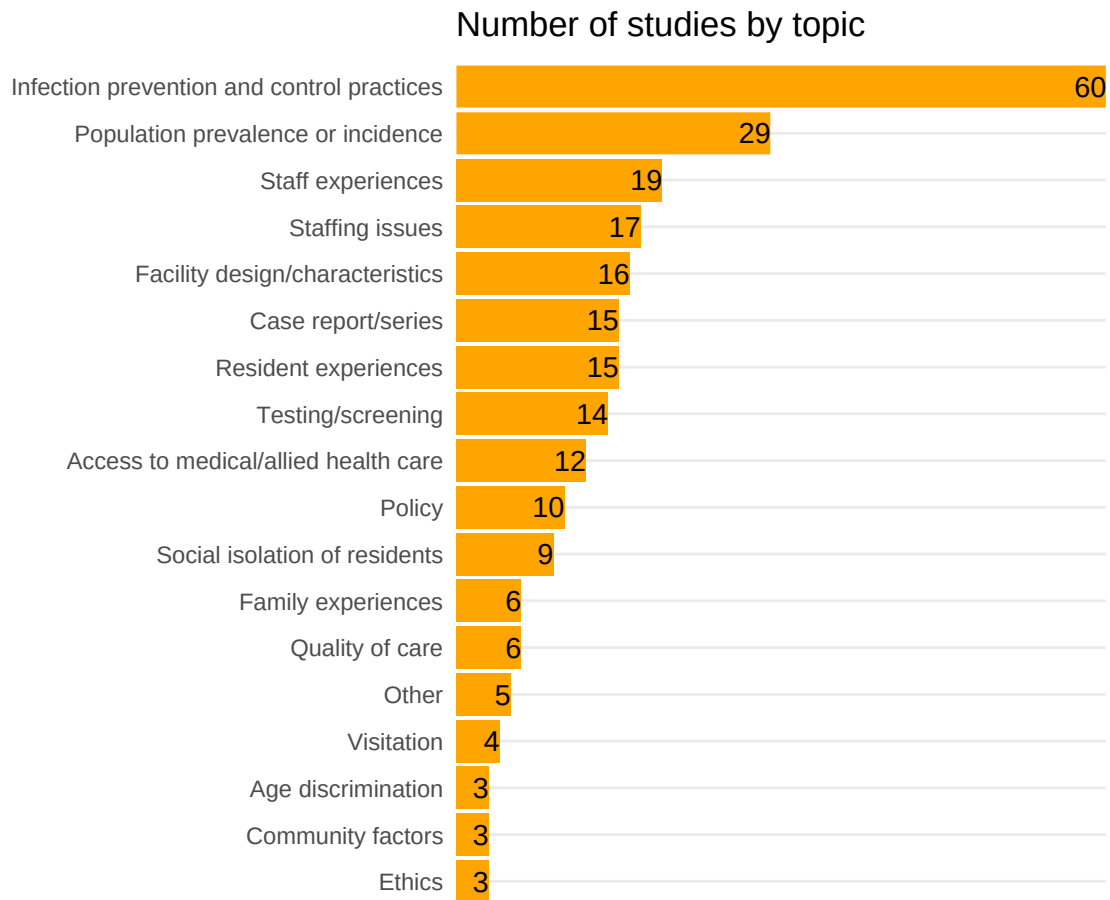


Figure 5.

