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Complete List of Authors:	van Tol, Lisa; Leiden University Medical Center, Public Health and Primary Care Smaling, Hanneke; Leiden University Medical Center, Public Health and Primary Care Groothuijse, Janneke; Leiden University Medical Center, Public Health and Primary Care Doornebosch, Arno; Leiden University Medical Center, Public Health and Primary Care Janus, Sarah; University Medical Centre Groningen Zuidema, Sytse; University Medical Centre Groningen, dept. of General Practice Caljouw, Monique A. A.; Leiden Univ, Public Health and Primary Care Achterberg, Wilco; Leiden University Medical Center, Department of Public Health and Primary Care de Waal, Margot; Leiden University Medical Center, Department of Public Health and Primary Care
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Title: Covid-19 Management In NUrsing homes by outbreak TEamS (MINUTES) study: study description and first results

Corresponding author: Lisa S. van Tol MSc, Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, The Netherlands

Postal address: LUMC, Lisa van Tol, Department of Public Health and Primary Care, Post zone V0-P, P.O. Box 9600, 2300 RC Leiden, The Netherlands

E-mail address: l.s.van_tol@lumc.nl

Telephone number: 003171 5268488

Author names: Lisa S. van Tol MSc.[1], dr. Hanneke J.A. Smaling[1], Janneke M. Groothuijse MSc.[1], Arno J. Doornebosch, MSc.[1], dr. Sarah I.M. Janus[2], prof. Sytse U. Zuidema, MD[2], dr. Monique A.A. Caljouw[1], prof. Wilco P. Achterberg, MD[1], dr. Margot W.M. de Waal[1]

Author affiliations:

1. Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, The Netherlands
2. Department of General Practice & Elderly Care Medicine, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands

Abstract

Objectives: Nursing homes are hit relatively hard by the Covid-19 pandemic. Dutch long-term care (LTC) organizations installed Outbreak Teams (OT) to coordinate Covid-19 infection prevention and control. LTC organizations and relevant national policy organizations expressed the need to share experiences from these OT that can be applied directly in Covid-19 policy. The aim of the "Covid-19 Management In NUrsing homes by outbreak TEamS" (MINUTES) study is to describe the challenges, responses, and the impact of the Covid-19 pandemic in Dutch nursing homes. In this first article we describe the MINUTES study and present first results.

Design: This large-scale multi-center study has a thematic qualitative design.

Setting: National study with 41 large Dutch LTC organizations.

Participants: The 41 participating LTC organizations represented 563 nursing home locations and almost 43,000 residents

Results: At least 36 of the 41 organizations had one or more SARS-CoV-2 infections among their residents. Most OT were composed of management, medical staff, support services staff, policy advisors, and communication specialists. The participating organizations shared their OT minutes and other meeting documents on a weekly basis. Data on measures, problems, stocks and infection rates of week 16 (April) to week 53 (December) 2020 were thematically analyzed by a group of 19 researchers. Central themes that emerged from the documents were: crisis management, isolation of residents, personal protective equipment (PPE) and hygiene, staff, residents' wellbeing, visitor policies, testing, and vaccination.

Conclusions: OT meeting minutes are a valuable data source to monitor the impact of Covid-19 in nursing homes. Depending on the course of the Covid-19 pandemic, data collection

and analysis will continue until November 2021. The results are used directly in national and organizational Covid-19 policy considerations.

Strengths and limitations of this study

- Minutes provide a true reflection of the impact, challenges and responses to problems and measures taken regarding the Covid-19 pandemic in LTC organizations that can directly be used in policy considerations.
- The large sample of participating LTC organizations represents over one third of nursing home residents nationwide, making data generalizable.
- Meeting documents sometimes were only brief descriptions of decisions that lacked context.
- The longitudinal nature of our study enables analysis of medium and long-term impact of the pandemic in nursing homes and comparison of data between multiple waves of infections over time.

INTRODUCTION

Covid-19 can have a serious and fatal course, especially among vulnerable older adults.[2, 3] In 2020 nursing home residents in many countries on average made up 46% of Covid-19 related deaths.[4] Dutch nursing homes were hit relatively hard by the pandemic. In 2020, about 13,000 of the total of 115,000 nursing home residents nationwide [1], had a confirmed SARS-CoV-2 infection. Another 12,000 were registered as possibly infected, and more than 3,000 deaths were registered.[5]

Prior to the Covid-19 pandemic, nursing homes and other long-term care facilities (LTCF) have had ample experience with outbreaks such as norovirus and influenza. Guidelines are available on how to prevent and act in case of outbreaks of these infectious diseases.[6] The World Health Organization (WHO) recommends LTCF to have an infection prevention and control (IPC) focal point to lead and coordinate IPC activities, supported by an IPC team.[7] They would be responsible for IPC training, providing information to residents, maintaining high hygiene standards and more.[7] In contrast to the more common infections, Covid-19 was unknown, and the impact of the pandemic required rapid policy decisions, both at the national and the local levels.

Internationally, social distancing, wearing face masks, and avoiding crowds became important policies to slow the spread of the virus.[8] LTCF in many European countries were faced with national visitor bans.[9] At the start of the pandemic, the long-term care (LTC) sector felt marginalized as government guidelines first focused on hospitals.[10, 11] LTCF faced a lack of policy guidelines and personal protective equipment (PPE).[10, 11] Therefore, both LTC organizations and national policy institutes, including the Ministry of Public Health Welfare and Sport, expressed the need to learn from each other by sharing experiences, which could be used directly in LTC Covid-19 policy considerations.

Most Dutch LTC organizations consist of multiple LTCF and have an IPC committee. Only in severe outbreaks do LTC organizations install or convert IPC committees into Outbreak Teams (OT), that, in contrast to IPC committees, include management representatives.[12] All LTC organizations did this in the Covid-19 pandemic.[12] The aim of the "Covid-19 Management In NUrsing homes by outbreak TEamS" (MINUTES) study is to describe the challenges presented by, responses to, and the impact of the Covid-19

pandemic in nursing homes, based on the minutes and other meeting documents of the OT. We will describe the MINUTES study and present baseline characteristics and first qualitative results regarding central themes discussed by the OT.

METHODS

Design

The MINUTES study is a large national multi-center study and has a qualitative thematic design based on content analysis of meeting documents.

The Leiden-The Hague-Delft Medical Ethical committee reviewed the study protocol and provided a waiver of medical ethical approval since the study is not subject to the Dutch Medical Research Involving Human Subjects Act (WMO). Directors of all LTC organizations informed their OT about study participation and provided written informed consent.

Setting

Dutch LTC organizations often provide a wide range of inpatient and outpatient medical and social care.[13] In nursing homes, high-level and intensive care is provided[13] under the responsibility of specially trained and registered elderly care physicians.[14] Inpatient assisted living care is provided in care homes.[13] Many LTC organizations also provide geriatric rehabilitation and homecare.[13] The focus of this study is on care homes and nursing homes, hereafter referred to as nursing homes.

OT document their meetings in minutes. In order to avoid adding to staff burden during this crisis, we have collected and analyzed these minutes from week 12, 2020

onwards. National infection rates in the Netherlands showed a 'first wave' from weeks 11 to 19 of 2020 and a 'second wave' from week 39 onwards.[15]

Participants

The LTC organizations of the Dutch academic nursing home research networks[16] were approached for participation by e-mail in weeks 11 to 15 of 2020. The aim was to recruit at least 50% of the organizations from at least two networks to achieve an accurate reflection of the actual situation. Other LTC organizations that heard of the study and expressed a willingness to participate were also eligible for participation. The meeting documents had to include minutes, preferably supplemented with associated meeting documents, such as overviews of SARS-COV-2 infections among residents.

Data collection

OT meeting documents were shared with the study institute's research center within a week after the meetings. The research center operated as trusted third party; they pseudonymized names of LTC organizations and deleted personal data of residents and staff from the submitted documents. Subsequently, they uploaded the documents in the online electronic data capture program 'Castor'[17] to make them available to the researchers for analysis. In addition, the organizations were asked to provide numbers of residents, employees, nursing home locations, as well as organization and OT characteristics.

Data analysis

A coding frame was developed by two coordinating researchers (LST, MWMW). They read two publications about IPC in care organizations[18, 19] and independently coded the

same minutes document to develop a first version of the coding frame. From weeks 12 to 15 they each coded half of the documents that were available from the first six participating LTC organizations. In weekly consensus meetings, they discussed their work and inductively adapted the coding frame (appendix). After week 15, all other researchers could suggest additional codes. The three coordinating researchers (LST, MWMW, JMG) decided which suggested codes were added to the coding frame.

In total, 19 researchers analyzed the meeting documents, ranging from master students and PhD candidates to post-doc researchers. The common denominator was that they all performed research with a focus on LTC and wanted to assist in the pandemic.

Data were analyzed on a weekly basis in two steps. First, the researchers coded the meeting documents. They were instructed to select passages that included data on measures, problems, stock or infection rates, and assign each passage a code from the coding frame in an open field in the Castor database. Second, all coded data were checked by one of two coordinating researchers (LST or JMG) on a weekly basis. Subsequently, the coordinating researchers clustered codes intro central themes.

Quality control

The coordinating researchers provided all other researchers with digital versions of the standard operating procedures and the coding frame and were individually instructed by the coordinating researchers. For each researcher the passages they selected in their first two to four weeks were double coded by coordinating researcher LST and if needed feedback was given and improvement was monitored. Half yearly meetings with all researchers were organized.

Summary reports

The coordinating researchers prepared thematic reports on a weekly to triweekly basis. These were shared as input for policy with participating LTC organizations, the Ministry of Public Health, Welfare and Sport, the Chief Nursing Officer, and professional associations for elderly care physicians, nurses, and nursing homes.

Patient and public involvement

This study was initiated based on the need of LTC organizations and national policy organizations to share experiences from these OT that can be applied directly in Covid-19 policy. The study did not involve patients and the public in study design or analyses. We did sent the summary reports and frequently asked the receivers for feedback and additional research questions. In a follow-up study, nursing home staff has elaborated on OT responses to the pandemic that were described in the meeting documents.

RESULTS

The first results presented in this article are based on the data from week 16 to week 53, 2020.

Participating LTC organizations

A total of 41 LTC organizations participated in this study (Figure 1), representing almost 43,000 residents in 563 nursing homes locations. Of these 41 organizations, 39 belonged to five of the six Dutch academic nursing home research networks, representing 58% of the organizations in these networks. The organizations varied in size from three to

70 nursing homes. More than 40% of the organizations installed their OT in week 10 or 11. From weeks 16 to 53 at least 88% (n=36) of the organizations had (one or more) SARS-CoV-2 infections among residents (Table 1). Organizations, on average, shared meeting documents over 23.1 of 38 weeks (median 24, IQR 10.5–35.0). Per week, 15 (week 32) to 39 (week 18) organizations shared meeting documents (Figure 2). Five organizations contributed meeting documents over all 38 weeks.

Table 1. Description of participating long-term care organizations

Participating organizations	**n = 41 (100%)**
	Range / no. (%)
Nursing home locations	3 – 70
1 - 10	20 (49%)
11 - 20	17 (42%)
≥ 20	4 (10%)
Residents	171 – 4,700
1 - 999	20 (49%)
1,000-1,999	14 (34%)
≥ 2,000	5 (12%)
missing	2 (5%)
SARS-CoV-2 infected residents	
yes	36 (88%)
missing	5 (12%)
week 16 - 19	22 (54%)
week 20 - 38	9 (22%)
week 39 -53	29 (71%)
Start date OT	week 8 - 13
≤ week 9	3 (7%)
week 10 –11	17 (42%)
≥ week 12	7 (17%)
missing	14 (34%)

Data shared in weeks	*Median (IQR)*
week 16 – 53 (38 weeks)	24 (10.5 – 35.0)

Outbreak Teams' members

The composition of the OT was known for 30 LTC organizations (73%). All but one included management (e.g. directors, managers, and administrators). In 60 to 80% of the OT, medical staff (e.g. elderly care physicians, occupational physicians, and other physicians), support services staff (facility management and human resources), policy advisors (including quality officers), and communication specialists were represented. In a few OT, nursing staff (6 OT) and residents (1 OT) were represented (Figure 3).

Themes discussed

The following eight central themes were extracted from the data:

1. Crisis management

From the start of the pandemic OT discussed, at the organizational level, infection rates, preparations for worst case scenarios, monitoring and evaluation of IPC and outbreak management, Covid-19 related finances, OT meeting frequency, internal and external communication, and regional collaboration. E.g., roadmaps were developed to create or close Covid-19 cohorts, OT meeting frequencies fluctuated with infection rates, and LTC organizations set up regional Covid-19 locations.

2. Isolation of residents

The occupation and availability of beds for both SARS-CoV-2-infected and non-infected residents and other SARS-CoV-2 infected patients was a recurring theme. LTC organizations applied various isolation and social distancing policies, such as quarantine, individual segregation and isolation, and cohort nursing. At various times, nursing home departments with Covid-19 outbreaks stopped admitting new residents. Providers of non-essential care, such as pedicures and dental hygienists, were banned from the nursing homes. OT also discussed ethical dilemmas and customization of these measures to local situations or resident groups, e.g. psychogeriatric residents.

3. Personal protective equipment (PPE) and hygiene

This theme included hygiene procedures and available stock, policies for use and experiences with wearing PPE. During the first wave of infections, with shortages and rising costs, OT considered the sterilization and reuse of PPE. OT further discussed promoting proper PPE use and policies for what types of PPE which staff members were to use for which proceedings. Changes in national guidelines gave cause for discussion within the OT. Staff experiences with wearing PPE and possible solutions for their challenges in daily use were also discussed. E.g., mouth-nose masks affected communication with some residents. Hygiene procedures included hand hygiene, laundry and waste management, and airborne precautions such as use of air conditioning and ventilation.

4. Staff

This theme included isolation and social distancing restrictions for staff, workforce scheduling, supporting staff with materials and facilities, their wellbeing, and mental support. The minutes first described distancing policies for employees and volunteers during work, training sessions and meetings. E.g., staff members were not allowed to work in more

than one nursing home location. In addition, isolation measures and absenteeism were topics of conversation. Staff waiting for their own or their housemates' test results had to stay at home in quarantine or, in times of staff shortages, had to work in Covid-19 cohorts. Second, workforce scheduling was a logistical challenge due to high absenteeism among staff and distancing policies. Therefore, temporary workers, non-healthcare staff members and even army medical staff were deployed. Third, OT facilitated staff by means of, e.g., equipment to work from home. Fourth, OT discussed the impact of the Covid-19 crisis on staff mental wellbeing. They spoke of emotional exhaustion of staff due to the high workload, fear of becoming infected, and verbal abuse by residents' family members. LTC organizations set up various mental support initiatives to support staff.

5. Residents' wellbeing

The impact of the Covid-19 crisis on residents' wellbeing was also a focus of attention. E.g., loneliness and restlessness were observed in residents more frequently. OT discussed restarting or continuation of activities for residents. Group activities had to be replaced by individual or living room activities. Issues also included whether to allow residents to go outside with their informal caregivers. Also, palliative care death rituals and memorial events required adjusting.

6. Visitor policies

This theme is about the organization of and experiences with visiting regulations. During total lockdowns alternatives for social contact were offered, such as window visits and video calling. After the national visitor ban was partly lifted in May, OT made decisions about regulated lengths of visits, maximum numbers of visitors, and use of PPE by visitors. To organize regulations, visitors needed to register upon entering the nursing home or had

to schedule their visit online. Sometimes LTC organizations allowed staff to customize visiting policies to local situations or for residents in the end-of-life phase. OT discussed experiences with and impact of these policies and considered how to deal with family of residents disagreed with visiting policies.

7. Testing

Since week 15, when testing of nursing home staff and residents for Covid-19 became possible nationwide, OT discussed the policies, organization and logistics of testing. Many LTC organizations implemented a policy to test residents at nursing home admission. In some organizations, staff and residents without symptoms were preventively tested following contact with an infected person. Regarding organization and logistics, routes for requesting tests and receiving test results required OTs' attention. Several organizations arranged their own testing facilities, due to waiting times at governmental test facilities.

8. Vaccination

The theme vaccination for residents and staff emerged around week 49. Staff and residents had to be informed about the upcoming vaccination process and preparations for vaccination had to be made.

DISCUSSION

The Covid-19 MINUTES study describes the challenges, responses, and the impact of the Covid-19 pandemic in Dutch nursing homes. The representative sample of 41 LTC organizations all installed OT in weeks 8 to 13. The composition of OT was multidisciplinary. Almost all organizations had SARS-CoV-2 infections among nursing home residents. Themes

discussed included crisis management, isolation of residents, PPE and hygiene, staff, residents' wellbeing, visitor policies, testing, and vaccination.

To our knowledge, the Covid-19 MINUTES study is the first large-scale qualitative study examining the challenges, responses, and the impact of the Covid-19 pandemic in nursing homes from the perspective of OT. In forthcoming studies, in-depth analyses of the central themes observed here will provide information that will be useful for management and IPC in subsequent phases of the Covid-19 pandemic and beyond.

The fluctuation in the amount of data collected per week (see Figure 2) appears to reflect the fluctuation in national infection rates.[24] However, compared to infection rates, the second peak in data collection seen in autumn is lower than the first peak in spring. This illustrates that central decision-making and frequency of OT meetings decreased, because they learned from experiences, policies formulated, and knowledge shared over the first months. On the other hand, implementation and adaptation of changing in national guidelines to local settings continued to be topic of conversation.

Our findings show that, in accordance with (inter)national recommendations, OT were multidisciplinary, [25, 26] although nursing staff and residents were mostly not represented. Consultation of LTC workers or representation of nurse specialists is recommended. [25, 26] Nursing staff was represented in only one fifth of the OT, although it is possible that they were consulted. The recommendations did not entail representation of residents. This was seen in only one OT.

The observed themes are in line with IPC guidance literature. Apart from vaccination, all themes are mentioned by the WHO in a guidance report on Covid-19 in healthcare[20] and in a policy brief on preventing and managing Covid-19 in LTC.[21] The measures taken to

prevent infections increase workload and negatively impact staff and resident wellbeing.[12, 22] The topics of testing, isolation of residents, PPE, and staff and residents' wellbeing were identified as challenges and dilemmas related to Covid-19 in care homes.[23]

Strengths and limitations

The first strength of our study is our data source. Minutes and other meeting documents provide a true reflection of challenges, responses and impact of the Covid-19 pandemic in LTC organizations. Preliminary analysis of these data has been used directly as input for national and organizational Covid-19 policies and it is a valuable source for more in-depth scientific evaluation. There are other projects that supported LTC organizations during the pandemic,[27] but to our knowledge ours is the only project that supports both organizations and national policy makers with quick input. The participating organizations gave positive feedback that the use of this data source led to a low study load during these times of crisis.

Second, the longitudinal nature of our study design is a strength. Data have been collected from the start of the Covid-19 pandemic. This enables analysis of medium and long-term impact of the pandemic in nursing homes,[22] and comparison of data between multiple waves of infections over time.

Third, the large sample of participating LTC organizations represents over one third of nursing home residents nationwide,[1] making data generalizable to the Netherlands.

Some study limitations should also be recognized. First, some data were missing. Five LTC organizations did not share data on infection rates. In addition, most organizations did not share meeting minutes over the whole study period (38 weeks). However, sometimes

meeting documents were absent because OT had not held meetings, especially from weeks 20 to 38 when infection rates were low, and central decision-making was less necessary. In this regard, the amount of data that were shared is satisfactory. Moreover, the overall large amount of data available will be sufficient to reach saturation in future in-depth analyses.

Second, meeting documents sometimes were only brief descriptions of decisions that lacked context. To overcome this limitation, each researcher analyzed a fixed set of LTC organizations in order to get a better indication of the context.

Implications and future research

Minutes and other meeting documents provide a valuable data source for studies on IPC and crisis management. They can be used directly as input for national and organizational policy and scientific evaluation. Multidisciplinary OT discussed crisis management, isolation of residents, PPE and hygiene, staff, residents' wellbeing, visitor policies, testing, and vaccination during their meetings. Depending on the course of the Covid-19 pandemic, the data collection will continue until November 2021.

In coming studies, challenges, responses and impact of the Covid-19 pandemic regarding the central themes will be analyzed in-depth. This will provide valuable lessons that can be used for management and IPC in subsequent phases of the pandemic, future heavy-impact epidemics, and other crisis situations, as healthcare organizations, national governments and (inter)national institutes will continue to innovate care.

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Competing interests None.

Contributors Authors LST, HJAS, SUZ, MAAC, WPA and MWMW initiated the study and drafted the manuscript. AJD and JMG contributed with design, maintenance and data management. SIMJ contributed with data. LST, HJAS, JMG, SIMJ, MWMW and the other researchers mentioned in the acknowledgements analyzed the data. All authors revised the manuscript and approved the final version to be published.

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Data availability statement Pseudonymized data are available upon reasonable request. prohibit the authors from making the data set publicly available. During the consent process, participating organizations were explicitly guaranteed that the data would be pseudonymized by the study's research center and that pseudonymized data would only be

seen my members of the study team. For any discussions about the data set please contact UNC-ZH@lumc.nl .

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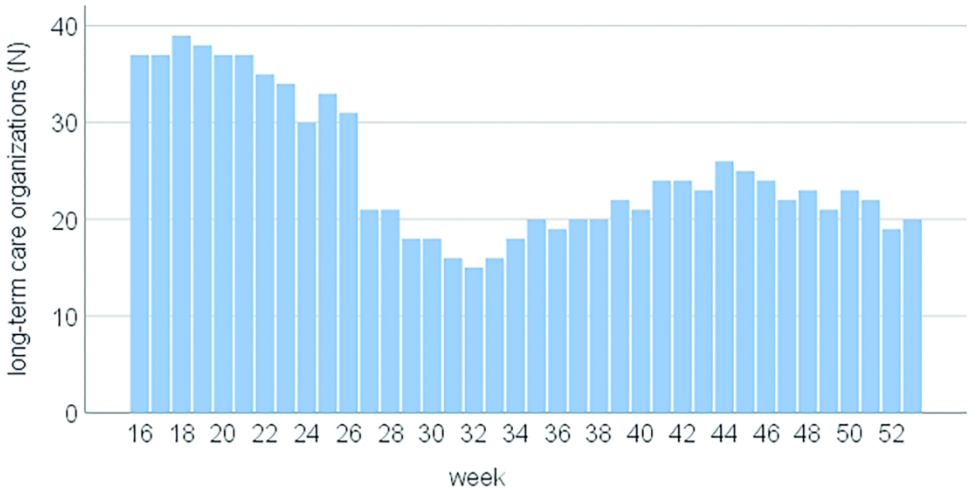
Figure 1: participating long-term care (LTC) organizations from the Netherlands
*Two LTC organizations with locations in multiple regions are presented with multiple dots

Figure 2. Number of long-term care organizations that shared meeting documents per week

Figure 3. Disciplines represented in Outbreak Teams

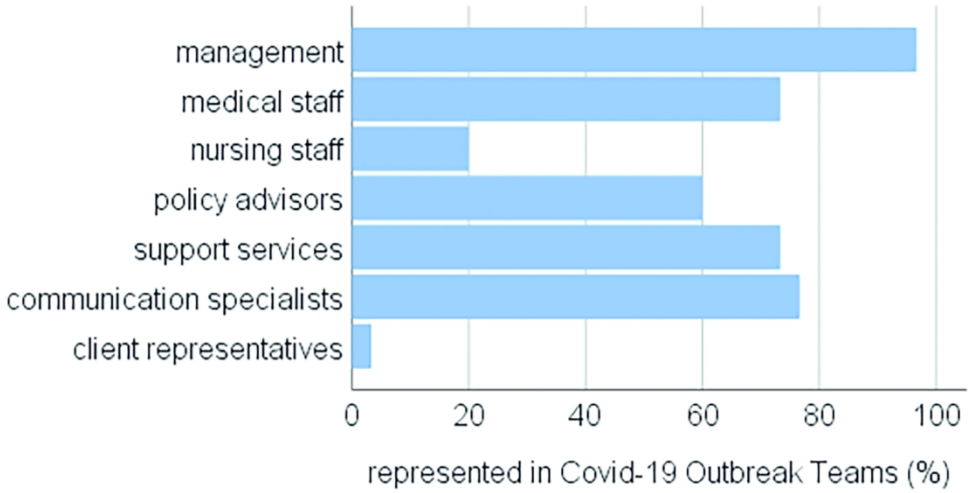
participating long-term care (LTC) organizations from the Netherlands
*Two LTC organizations with locations in multiple regions are presented with multiple dots

75x69mm (300 x 300 DPI)



Number of long-term care organizations that shared meeting documents per week

175x87mm (300 x 300 DPI)



Disciplines represented in Outbreak Teams

143x73mm (300 x 300 DPI)

Appendix: Coding frame preliminary results Covid-19 MINUTES study

Theme	Code	Explanation	Week added
1.	**Crisis management**		
	budgets, finances	everything concerning finances	14
	communication		14
	Crisis status	general situation, e.g. stabilization of situtation, outbreak status	19
2.	**Isolation of residents**		
	Beds, segregation and isolation (general)	including integrated care function	14
	Free up beds		14
	Segregation and isolation	of residents	15
	Admissions	(policy re) new admissions	15
3.	**Personal protective equipement (PPE) and hygiene**		
	Hygiene/disinfection	concerns environment and personal hygiene	14
	Personal protective equipment (PPE)	gloves, masks, aprons, goggles	14
	PPE: disinfectants		14
	PPE: deployment and utilization	e.g. instructions, when to wear face mask	26
	PPE: stock	e.g. shortages, supply, quality tests	26
4.	**Staff**		
	Staff		14
	Staff: competences	e.g. validity of certificates, e.g. caregiver carries out nursing tasks	14
	Staff: cohorting and isolation		14
	Staff: facilitation	e.g. childcare, e-learning	14
	Staff: deployment (additional or change)		14
	Materials for staff	e.g. telephones	14
	Volunteers		14
	Staff: wellbeing		19
5.	**Residents' wellbeing**		
	Activities for residents	planning, cancelling, alternatives	14
	Informal caregivers, family		14
	Palliatieve situation, death		14
	Wellbeing of residents	physical and mental wellbeing	19

6.	**Visitors policies**		
	Visitors, door policy (general)		14
	Materials: hardware video calling		14
	Visitors: experiences	evaluation, disruption, problems	26
	Visitors: policy	e.g. number of visitors and who	26
	Visitors: organization	e.g. planning, registration, accompanying visitors	26
7.	**Testing**		
	Staff: testing and disease		17
	Testing residents	testing, contact tracing etc. among clients	45
	Testing (undefined)	testing, contact tracing etc., not specifically staff only or residents only	45
8.	**Vaccination**		
	Vaccinations corona		50

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	N/A
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	1
Occupation	3	What was their occupation at the time of the study?	7
Gender	4	Was the researcher male or female?	N/A
Experience and training	5	What experience or training did the researcher have?	N/A
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	6
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	8
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	N/A
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	5
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	6
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	6
Sample size	12	How many participants were in the study?	8
Non-participation	13	How many people refused to participate or dropped out? Reasons?	8
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	6
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	N/A
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	9
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	6, 7
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	N/A
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	N/A
Field notes	20	Were field notes made during and/or after the inter view or focus group?	N/A
Duration	21	What was the duration of the inter views or focus group?	N/A
Data saturation	22	Was data saturation discussed?	N/A (see p.16)
Transcripts returned	23	Were transcripts returned to participants for comment and/or	N/A

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	7
Description of the coding tree	25	Did authors provide a description of the coding tree?	7 and supplem
Derivation of themes	26	Were themes identified in advance or derived from the data?	6, 7
Software	27	What software, if applicable, was used to manage the data?	6
Participant checking	28	Did participants provide feedback on the findings?	8
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	N/A
Data and findings consistent	30	Was there consistency between the data presented and the findings?	N/A
Clarity of major themes	31	Were major themes clearly presented in the findings?	10
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	10

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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COVID-19 management in nursing homes by outbreak teams (MINUTES) study: study description and data characteristics. A qualitative study.

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Title: COVID-19 management in nursing homes by outbreak teams (MINUTES) study: study description and data characteristics. A qualitative study

Corresponding author: Lisa S. van Tol MSc, Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, The Netherlands

Postal address: LUMC, Lisa van Tol, Department of Public Health and Primary Care, Post zone V0-P, P.O. Box 9600, 2300 RC Leiden, The Netherlands

E-mail address: l.s.van_tol@lumc.nl

Telephone number: 003171 5268488

Author names: Lisa S. van Tol, MSc.[1], Hanneke J.A. Smaling, PhD[1], Janneke M. Groothuijse, MSc.[1], Arno J. Doornebosch, MSc.[1], Sarah I.M. Janus, PhD[2], Sytse U. Zuidema, MD PhD[2], Monique A.A. Caljouw, PhD[1], Wilco P. Achterberg, MD PhD[1], Margot W.M. de Waal, PhD[1]

Author affiliations:

1. Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, The Netherlands
2. Department of General Practice & Elderly Care Medicine, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands

Abstract

Objectives: Nursing homes are hit relatively hard by the COVID-19 pandemic. Dutch long-term care (LTC) organizations installed outbreak teams (OT) to coordinate COVID-19 infection prevention and control. LTC organizations and relevant national policy organizations expressed the need to share experiences from these OT that can be applied directly in COVID-19 policy. The aim of the "COVID-19 management in nursing homes by outbreak teams" (MINUTES) study is to describe the challenges, responses, and the impact of the COVID-19 pandemic in Dutch nursing homes. In this first article we describe the MINUTES study and present data characteristics.

Design: This large-scale multi-center study has a qualitative design using manifest content analysis. The participating organizations shared their OT minutes and other meeting documents on a weekly basis. Data from week 16 (April) to week 53 (December) 2020 included the first two waves of COVID-19.

Setting: National study with 41 large Dutch LTC organizations.

Participants: The LTC organizations represented 563 nursing home locations and almost 43,000 residents

Results: At least 36 of the 41 organizations had one or more SARS-CoV-2 infections among their residents. Most OT were composed of management, medical staff, support services staff, policy advisors, and communication specialists. Topics that emerged from the documents were: crisis management, isolation of residents, personal protective equipment and hygiene, staff, residents' wellbeing, visitor policies, testing, and vaccination.

Conclusions: OT meeting minutes are a valuable data source to monitor the impact of and responses to COVID-19 in nursing homes. Depending on the course of the COVID-19

pandemic, data collection and analysis will continue until November 2021. The results are used directly in national and organizational COVID-19 policy.

Strengths and limitations of this study

- Minutes of OT capture the impact, challenges and responses to problems and measures taken regarding the COVID-19 pandemic in LTC organizations. However some minutes were only brief descriptions of decisions that lacked context.
- Collecting existing minutes enabled analysis of a large amount of data, without adding to staff burden, that is often not feasible in qualitative studies.
- Minutes data allow not only for in-depth scientific analyses but can also directly be used as input for national and organizational COVID-19 policies.
- The longitudinal nature of our study enables analysis of medium and long-term impact of the pandemic in nursing homes during multiple waves of infections over time.

INTRODUCTION

COVID-19 can have a serious and fatal course, especially among vulnerable older adults.[1 2] Thus, nursing homes were hit relatively hard by the pandemic. In 2020 nursing home residents in many countries made up substantial proportions of COVID-19 related deaths.[3] Besides, COVID-19 related measures negatively impact nursing home residents' mental and physical wellbeing.[4]

Prior to the COVID-19 pandemic, nursing homes and other long-term care facilities (LTCF) have had ample experience with outbreaks such as norovirus and influenza. Guidelines are available on how to prevent and act in case of outbreaks of these infectious diseases.[5] By contrast, COVID-19 was unknown, and the impact of the pandemic required rapid policy decisions. For example social distancing, wearing face masks, and avoiding crowds became important policies to slow the spread of the virus.[6] LTCF in many European countries were also faced with visitor bans.[7]

To implement policies regarding infection prevention and control (IPC), the World Health Organization (WHO) recommends LTCF to have an IPC focal point to lead and coordinate IPC activities, supported by an IPC team.[8] They would be responsible for IPC training, providing information to residents, maintaining high hygiene standards and more.[8] Most Dutch LTC organizations have an IPC committee, but in severe outbreaks such as COVID-19 these organizations install or convert IPC committees into outbreak teams (OT). In contrast to IPC committees, OT include management representatives.[9]

Both LTC organizations and national policy institutes, including the Ministry of Public Health Welfare and Sport, expressed the need to learn from each other by sharing experiences, which could be used directly in LTC COVID-19 policy considerations. Therefore, the aim of the "COVID-19 management in nursing homes by outbreak teams" (MINUTES) study was to describe the challenges presented by, responses to, and the impact of the COVID-19 pandemic in nursing homes, based on the minutes and other meeting documents of the OT. We will describe the MINUTES study and present data characteristics and topics discussed by the OT.

METHODS

Study design and setting

The MINUTES study is a large national multi-center study and has a qualitative design based on manifest content analysis of meeting documents. OT document their meetings in minutes. In order to avoid adding to staff burden during this crisis, we have collected and analyzed these minutes. Directors of all LTC organizations informed their OT about study participation and provided written informed consent.

Dutch LTC organizations often provide a wide range of inpatient and outpatient medical and social care.[10] In nursing homes, care is provided by multidisciplinary teams, coordinated by specially trained and registered elderly care physicians.[11 12] Inpatient assisted living care is provided in care homes.[10] Furthermore many LTC organizations provide geriatric rehabilitation and homecare.[10] The focus of this study is on care homes and nursing homes, hereafter referred to as nursing homes.

In 2020, about 13,000 of the total of 115,000 nursing home residents nationwide [13], had a confirmed SARS-CoV-2 infection and another 12,000 were registered as possibly infected. More than 3,000 COVID-19-related deaths were registered.[14] National infection rates in the Netherlands showed a 'first wave' from weeks 11 to 19 of 2020 and a 'second wave' from week 39 onwards.[15]

Participants

The LTC organizations of the Dutch academic nursing home research networks[16] were approached for participation by e-mail in weeks 11 to 15 of 2020. The aim was to recruit at least 50% of the organizations from at least two networks to achieve an accurate

reflection of the actual situation. Other LTC organizations that heard of the study and expressed a willingness to participate were also eligible for participation. The meeting documents had to include minutes, preferably supplemented with associated meeting documents, such as overviews of SARS-COV-2 infections among residents.

Data collection

OT meeting documents were shared with the study institute's research center within a week after the meetings. The research center operated as trusted third party; they pseudonymized names of LTC organizations and deleted personal data of residents and staff from the submitted documents. Subsequently, they uploaded the documents in the online electronic data capture program 'Castor'[17] to make them available to the researchers for analysis. In addition, the organizations were asked to provide numbers of residents, employees, nursing home locations, as well as organization and OT characteristics.

Data analysis

A coding frame was developed inductively by two coordinating researchers (LST, MWMW). They independently coded the same minutes document in order to develop a first version of the coding frame. Subsequently, from weeks 12 to 15 they each coded half of the documents that were available from the first six participating LTC organizations with this first version of the coding frame. In weekly consensus meetings, they discussed their work and expanded the coding frame (appendix). After week 15, all other researchers could suggest additional codes. Which of the suggested codes were added to the coding frame was decided by three coordinating researchers (LST, MWMW, JMG) .

In total, 19 researchers analyzed the meeting documents, ranging from master students and PhD candidates to post-doc researchers. The common denominator was that they all performed research with a focus on LTC and wanted to assist in the pandemic.

Data were analyzed using manifest content analysis. [18 19] This was done on a weekly basis in two steps. First, the researchers coded the meeting documents. They were instructed to select at least all passages, called textual units, that included data on measures, problems, stock or infection rates. This corresponds with the study aim to describe the challenges (problems, stock, infections rates) presented by, responses to (measures), and the impact (resulting from challenges and responses) the COVID-19 pandemic in nursing homes. Besides, the researchers were aware of the use of data for writing the summary reports described below as input for policy. Each textual unit selected had to be assigned with a code from the coding frame in an open field in the Castor database. Second, the coordinating researchers clustered codes into topics, which are referred to as 'data categories' in literature.[19]

Quality control

The coordinating researchers provided all other researchers with individual instructions, digital standard operating procedures, and the coding frame. For each researcher the textual units they selected in their first two to four weeks were double coded by LST and if needed feedback was given and improvement was monitored. Half yearly meetings with all researchers were organized. Besides, all coded data were checked by one of two coordinating researchers (LST or JMG) on a weekly basis.

Summary reports

Besides scientific analysis, coded data were used by the coordinating researchers to prepare summary reports on a weekly to triweekly basis. In these reports, they summarized the most recent meeting documents and listed what they regarded as the most important points of attention for policy makers. These reports were shared as input for policy with participating LTC organizations, the Ministry of Public Health, Welfare and Sport, the Chief Nursing Officer, and professional associations for elderly care physicians, nurses, and nursing homes.

Patient and public involvement

This study was initiated based on the need of LTC organizations and national policy organizations to share experiences from these OT that can be applied directly in COVID-19 policy. The study did not involve patients and the public in study design or analyses. However, we frequently held evaluation meetings with the receivers of the summary reports for feedback and additional research questions. In a follow-up study, nursing home staff has elaborated on OT responses to the pandemic that were described in the meeting documents.

RESULTS

The data characteristics presented in this article are based on the data from week 16 to week 53 2020, including the first two waves of COVID-19 infections.

Participating LTC organizations

A total of 41 LTC organizations participated in this study (Figure 1). These organizations represented almost 43,000 residents living in 563 nursing homes locations. Of

these 41 organizations, 39 belonged to five of the six Dutch academic nursing home research networks, representing 58% of the organizations in these networks. The organizations varied in size from three to 70 nursing homes. More than 40% of the organizations installed their OT in week 10 or 11. From weeks 16 to 53 at least 88% (n=36) of the organizations had (one or more) SARS-CoV-2 infections among residents (Table 1). Organizations, on average, shared meeting documents over 23.1 of 38 weeks (median 24, IQR 10.5–35.0). Per week, 15 (week 32) to 39 (week 18) organizations shared meeting documents (Figure 2). Five organizations contributed meeting documents over all 38 weeks.

Table 1. Description of participating long-term care organizations

Participating organizations	**n = 41 (100%)**
	Range / no. (%)
Nursing home locations	3 – 70
1 - 10	20 (49%)
11 - 20	17 (42%)
≥ 20	4 (10%)
Residents	171 – 4,700
1 - 999	20 (49%)
1,000-1,999	14 (34%)
≥ 2,000	5 (12%)
missing	2 (5%)
SARS-CoV-2 infected residents	
yes	36 (88%)
missing	5 (12%)
week 16 - 19	22 (54%)
week 20 - 38	9 (22%)
week 39 -53	29 (71%)
Start date OT	week 8 - 13
≤ week 9	3 (7%)
week 10 –11	17 (42%)

≥ week 12	7 (17%)
missing	14 (34%)
Data shared in weeks	*Median (IQR)*
week 16 – 53 (38 weeks)	24 (10.5 – 35.0)

Outbreak Teams' members

The composition of the OT was known for 30 LTC organizations (73%). All but one included management (e.g. directors, managers, and administrators). In 60 to 80% of the OT, medical staff (e.g. elderly care physicians, occupational physicians, and other physicians), support services staff (facility management and human resources), policy advisors (including quality officers), and communication specialists were represented. In a few OT, nursing staff (6 OT) and residents (1 OT) were represented (Figure 3).

Qualitative topics

The following eight topics were extracted from the data. Matching quotes that illustrate these topics are presented in table 2.

1. Crisis management

From the start of the pandemic, OT discussed infection rates, COVID-19 related finances, OT meeting frequency, internal and external communication, and regional collaboration. Besides, OT prepared for worst case scenarios and monitored and evaluated IPC and outbreak management. For example, OT meeting frequencies depended on infection rates.

2. Isolation of residents

The occupation and availability of beds for both SARS-CoV-2-infected and non-infected residents and other SARS-CoV-2 infected patients was a recurring topic. LTC organizations applied various isolation and social distancing policies, such as quarantine, isolation in single rooms, and cohort isolation. Besides, at various times, nursing home departments stopped admitting new residents or providers of 'non-essential' care, such as hair dressers and dental hygienists. OT also discussed ethical dilemmas and customization of these measures to local situations or resident groups, e.g. residents with psychogeriatric problems.

3. Personal protective equipment (PPE) and hygiene

This topic included hygiene procedures, and available stock, policies for use and experiences with wearing PPE. With shortages and rising costs, OT considered the sterilization and reuse of PPE. Besides, OT discussed promoting proper PPE use and set policies for what types of PPE when to be used by which staff members. Changes in national guidelines gave cause for discussion. Hygiene procedures included hand hygiene, laundry and waste management, and airborne precautions such as use of air conditioning and ventilation.

4. Staff

This topic included isolation and social distancing restrictions for staff, workforce scheduling, supporting staff with materials and facilities, their wellbeing, and mental support. The minutes first described distancing policies for employees and volunteers during work, training sessions and meetings. E.g., staff members were not allowed to work in more than one nursing home location. In addition, isolation measures and absenteeism were topics of conversation. Staff waiting for their own or their housemates' test results had to

stay at home in quarantine or, in times of staff shortages, had to work in COVID-19 cohorts. Second, workforce scheduling was a logistical challenge due to high absenteeism among staff and distancing policies. Therefore, temporary workers, non-healthcare staff members and even army medical staff were deployed. Third, OT facilitated staff by means of equipment to work from home. Fourth, OT discussed the impact of the COVID-19 crisis on staff mental wellbeing. They spoke of emotional exhaustion of staff due to the high workload, fear of becoming infected, and verbal abuse by residents' family members. LTC organizations set up various mental support initiatives to support staff.

5. Residents' wellbeing

The impact of the COVID-19 crisis on residents' wellbeing was also a focus of attention. E.g., loneliness and restlessness were observed. OT discussed restarting or continuation of activities for residents. Group activities had to be replaced by individual or living room activities. Issues also included whether to allow residents to go outside with their informal caregivers. Palliative care death rituals and memorial events required adjusting.

6. Visitor policies

This topic is about the organization of and experiences with visiting regulations. During total lockdowns alternatives for social contact were offered, such as window visits and video calling. After the national visitor ban was partly lifted in May, OT made decisions about regulated lengths of visits, maximum numbers of visitors, and use of PPE by visitors. To organize regulations, visitors needed to register upon entering the nursing home or had to schedule their visit online. Sometimes LTC organizations allowed staff to customize visiting policies to local situations or for residents in the end-of-life phase. OT discussed

experiences with and impact of these policies and considered how to deal with family of residents disagreed with visiting policies.

7. Testing

Since week 15, when testing of nursing home staff and residents for COVID-19 became possible nationwide, OT discussed the policies, organization and logistics of testing. Many LTC organizations implemented a policy to test residents at nursing home admission. In some organizations, staff and residents without symptoms were preventively tested following contact with an infected person. Regarding organization and logistics, routes for requesting tests and receiving test results required OTs' attention. Several organizations arranged their own testing facilities, due to waiting times at governmental test facilities.

8. Vaccination

The topic vaccination for residents and staff emerged around week 49. Staff and residents had to be informed about the upcoming vaccination process and preparations for vaccination had to be made.

Table 2: quotes from meeting documents illustrating the topics identified

Crisis management
"Roadmaps (description of operational [OT] with clear roles) for new infections." - organization XF, week 26
"A next [OT] meeting will not yet be scheduled, but the situation in [municipality] will be monitored." - organization YF, week 33
"It is unclear how financing the COVID-wards in the province is going." – organization YX, week 23
Isolation of residents
"Scenario positive resident: no transferring, isolation in own room/ward - otherwise to cohort ward." – organization YB, week 25
"Hair dressers and beauticians can't go back to work yet in the nursing homes, because these homes are still locked down. The medical pedicure [podiatrist] can come and treat indoors on doctor's prescription." – organization XT, week 20

"Residents with psychogeriatric problems and the urge to wander are difficult to keep in quarantine for 7 days. They are therefore not admitted to [location], which is still 'clean'."– organization XZ, week 16

PPE and hygiene
"Pressure is put on ordering the right aprons, these are hard to get."– organization XF, week 16

"At psychogeriatrics [ward] it has been indicated that continuously working with mouth mask/PPE is not always experienced positively by residents and staff. Yet with ADL care [care regarding Activities of Daily Living], PPE's are experienced as pleasant." - organization YS, week 31

"Attend staff to sound hand hygiene and sound use of gloves. Keep cleaning laptops, telephones, door handles etc."– organization YW, week 41

Staff
"The exchange of staff between [ward] and other parts of [nursing home] has to be prevented as much as possible." – organization XH, week 20

"We could fall back on the old scenario, like asking retired nurses and call in the military. Getting regional assistance will be difficult." – organization XF, week 41

"In ward with many infections the workload is high, staff members are emotionally 'done'." – organization YB, week 18

Residents' wellbeing
"Due to a positive [tested] residents, the other residents feel restless and would like to leave their rooms" – organization XF, week 21

"Church activities with 1.5 meters distance, maximum 30 persons, singing discouraged."- organization XS, week 24

Visitor policies
"Volunteers are deployed for visitors cabins: scheduling appointments, receiving visitors, serving coffee, cleaning cottage after each visit."- organization XZ, week 17

"Family does not keep enough distance from the residents. Staff finds this worrisome, visitors don't allow anyone to correct them. The question remains what can be done about this." – organization XH, week 27

Testing
"If a resident tests positive, we will test the fellow residents and close contacts of the residents with rapid tests." – organization YE, week 46

"Not enough test materials in stock available. Swaps have to be picked up an brought back again."- organization XC, week 43

"Because healthcare workers sometimes cannot be tested within 24 hours, our own test location is being set up" – organization XF, week 36

Vaccination
"Preparing vaccinating, the [IPC committee] believes that it is too early to set up a program/plan. A message with information about how a vaccine works is already being placed on the intranet." – XP week 52

DISCUSSION

The COVID-19 MINUTES study describes the challenges, responses, and the impact of the COVID-19 pandemic in Dutch nursing homes. The representative sample of 41 LTC organizations all installed OT in weeks 8 to 13. The composition of OT was multidisciplinary. Almost all organizations had SARS-CoV-2 infections among nursing home residents. Topics in the qualitative data included crisis management, isolation of residents, PPE and hygiene, staff, residents' wellbeing, visitor policies, testing, and vaccination.

To our knowledge, the COVID-19 MINUTES study is the first large-scale qualitative study examining the challenges, responses, and the impact of the COVID-19 pandemic in nursing homes. In forthcoming studies, more in-depth analyses of the topics observed here will provide information that will be useful for management and IPC in subsequent phases of the COVID-19 pandemic and beyond.

The fluctuation in the amount of data collected per week (see Figure 2) appears to reflect the fluctuation in national infection rates.[20] However, compared to infection rates, the second peak in data collection seen in autumn is lower than the first peak in spring. This illustrates that length or frequency of OT meetings decreased, because they learned from the first wave. On the other hand, implementation and adaptation of changing in national guidelines to local settings continued to be topic of conversation.

Our findings show that, in accordance with (inter)national recommendations, OT were multidisciplinary. [21 22] However, nursing staff was represented in only one fifth of the OT, although it is possible that they were consulted. Nevertheless, literature recommends

consultation of LTC workers or representation of nurse specialists. [21 22] Besides, paramedics working in nursing homes such as physiotherapists, psychologists and social workers[23] were not represented in OT. This underrepresentation of nursing staff and paramedics in OT may have affected the topics discussed.

The observed topics are in line with IPC guidance literature. Apart from vaccination, all topics are mentioned by the WHO in a guidance report on COVID-19 in healthcare[24] and in a policy brief on preventing and managing COVID-19 in LTC.[25] Testing, isolation of residents, PPE, and staff and residents' wellbeing were identified as challenges and dilemmas related to COVID-19 in care homes.[26] Remarkably, ample research has shown that COVID-19 related measures negatively impacts nursing home residents' mental and physical wellbeing,[4] but only little has been described about this in the meeting documents. Apparently, either OT meetings have a different focus, or OT discuss well-being of residents but regard this as context to decisions that does not have to be written down in the minutes.

Strengths and limitations

The first strength of our study is our data source. Minutes and other meeting documents capture challenges, responses and impact of the COVID-19 pandemic in LTC organizations. Collecting the existing documents enabled analysis of a large amount of data that is often not feasible in qualitative studies; the sample of participating LTC organizations represents over one third of nursing home residents nationwide[13]. The participating organizations indicate that the use of this data source led to a low study load during these times of crisis.

Second, the data allow for a more in-depth scientific analyses, and can also directly be used as input for national and organizational COVID-19 policies. There are other projects that supported LTC organizations during the pandemic,[27] but to our knowledge COVID-19 MINUTES is the only study that supports both organizations and national policy makers with quick input.

Third, the longitudinal nature of our study collected from the start of the COVID-19 pandemic enables analysis of medium and long-term impact of the pandemic in nursing homes.[28]

Some study limitations should also be recognized. First, some data were missing. Five LTC organizations did not share data on infection rates. In addition, most organizations did not share meeting minutes over the whole study period (38 weeks). However, sometimes meeting documents were absent because OT had not held meetings, especially from weeks 20 to 38 when infection rates were low. In this regard, the amount of data that were shared is satisfactory. Moreover, the overall large amount of data available will be sufficient to reach saturation in future in-depth analyses.

Second, data sometimes lacked context, because meeting documents itself were sometimes only brief descriptions of decisions. To overcome this limitation, each researcher analyzed a fixed set of LTC organizations in order to get a better indication of the context. Moreover, by selecting textual units for coding, these units are removed from their context. This is a known limitation of content analysis.[19]

Third, the focus on not only scientific analyses but also on writing summary reports as input for organizational and national policy makers could have biased data coding. Possibly, the researchers mainly coded data that they considered relevant for policy making.

However, researchers were instructed to code all textual units that included data on measures, problems, stock and infection rates.

Implications and future research

Minutes and other meeting documents provide a valuable data source for studies on IPC and crisis management, without burdening staff with data collection. They can be used directly as input for national and organizational policy and scientific evaluation. Multidisciplinary OT discussed crisis management, isolation of residents, PPE and hygiene, staff, residents' wellbeing, visitor policies, testing, and vaccination during their meetings. Depending on the course of the COVID-19 pandemic, the data collection will continue until November 2021.

In coming studies, data over the complete study period will be analyzed and challenges, responses and impact of the COVID-19 pandemic regarding the various topics will be analyzed in-depth. This will provide valuable lessons that can be used for management and IPC in subsequent phases of the pandemic, future heavy-impact epidemics, and other crisis situations, as healthcare organizations, national governments and (inter)national institutes will continue to innovate care.

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Competing interests None.

Contributors Authors LST, HJAS, SUZ, MAAC, WPA and MWMW initiated the study and drafted the manuscript. AJD and JMG contributed with design, maintenance and data management. SIMJ contributed with data. LST, HJAS, JMG, SIMJ, MWMW and the other researchers mentioned in the acknowledgements analyzed the data. All authors revised the manuscript and approved the final version to be published.

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Ethics Approval The Leiden-The Hague-Delft Medical Ethical committee reviewed the study protocol and provided a waiver of medical ethical approval since the study is not subject to the Dutch Medical Research Involving Human Subjects Act (WMO).

Patient consent for publication Not required

Data availability statement Pseudonymized data are available upon reasonable request. prohibit the authors from making the data set publicly available. During the consent process, participating organizations were explicitly guaranteed that the data would be pseudonymized by the study's research center and that pseudonymized data would only be seen my members of the study team. For any discussions about the data set please contact UNC-ZH@lumc.nl .

Word count: 3796 (excl. abstract and bullet points strengths and limitations)

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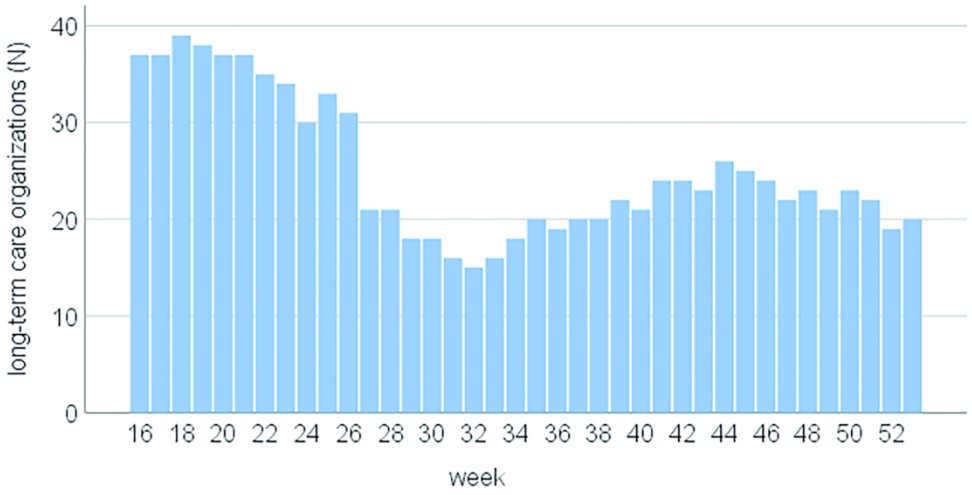
Figure 1: participating long-term care (LTC) organizations from the Netherlands
*Two LTC organizations with locations in multiple regions are presented with multiple dots

Figure 2. Number of long-term care organizations that shared meeting documents per week

Figure 3. Disciplines represented in Outbreak Teams

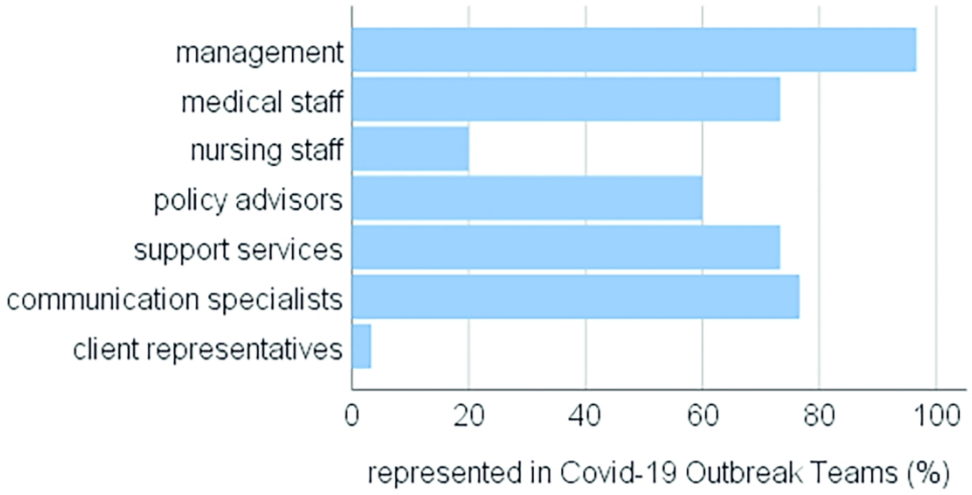
participating long-term care (LTC) organizations from the Netherlands
*Two LTC organizations with locations in multiple regions are presented with multiple dots

75x69mm (300 x 300 DPI)



Number of long-term care organizations that shared meeting documents per week

175x87mm (300 x 300 DPI)



Disciplines represented in Outbreak Teams

143x73mm (300 x 300 DPI)

Appendix: Coding frame preliminary results Covid-19 MINUTES study

Theme	Code	Explanation	Week added
1.	**Crisis management**		
	budgets, finances	everything concerning finances	14
	communication		14
	Crisis status	general situation, e.g. stabilization of situtation, outbreak status	19
2.	**Isolation of residents**		
	Beds, segregation and isolation (general)	including integrated care function	14
	Free up beds		14
	Segregation and isolation	of residents	15
	Admissions	(policy re) new admissions	15
3.	**Personal protective equipement (PPE) and hygiene**		
	Hygiene/disinfection	concerns environment and personal hygiene	14
	Personal protective equipment (PPE)	gloves, masks, aprons, goggles	14
	PPE: disinfectants		14
	PPE: deployment and utilization	e.g. instructions, when to wear face mask	26
	PPE: stock	e.g. shortages, supply, quality tests	26
4.	**Staff**		
	Staff		14
	Staff: competences	e.g. validity of certificates, e.g. caregiver carries out nursing tasks	14
	Staff: cohorting and isolation		14
	Staff: facilitation	e.g. childcare, e-learning	14
	Staff: deployment (additional or change)		14
	Materials for staff	e.g. telephones	14
	Volunteers		14
	Staff: wellbeing		19
5.	**Residents' wellbeing**		
	Activities for residents	planning, cancelling, alternatives	14
	Informal caregivers, family		14
	Palliatieve situation, death		14
	Wellbeing of residents	physical and mental wellbeing	19

6.	**Visitors policies**		
	Visitors, door policy (general)		14
	Materials: hardware video calling		14
	Visitors: experiences	evaluation, disruption, problems	26
	Visitors: policy	e.g. number of visitors and who	26
	Visitors: organization	e.g. planning, registration, accompanying visitors	26
7.	**Testing**		
	Staff: testing and disease		17
	Testing residents	testing, contact tracing etc. among clients	45
	Testing (undefined)	testing, contact tracing etc., not specifically staff only or residents only	45
8.	**Vaccination**		
	Vaccinations corona		50

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	N/A
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	1
Occupation	3	What was their occupation at the time of the study?	7
Gender	4	Was the researcher male or female?	N/A
Experience and training	5	What experience or training did the researcher have?	N/A
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	6
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	8
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	N/A
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	5
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	6
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	6
Sample size	12	How many participants were in the study?	8
Non-participation	13	How many people refused to participate or dropped out? Reasons?	8
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	6
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	N/A
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	9
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	6, 7
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	N/A
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	N/A
Field notes	20	Were field notes made during and/or after the inter view or focus group?	N/A
Duration	21	What was the duration of the inter views or focus group?	N/A
Data saturation	22	Was data saturation discussed?	N/A (see p.16)
Transcripts returned	23	Were transcripts returned to participants for comment and/or	N/A

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	7
Description of the coding tree	25	Did authors provide a description of the coding tree?	7 and supplem
Derivation of themes	26	Were themes identified in advance or derived from the data?	6, 7
Software	27	What software, if applicable, was used to manage the data?	6
Participant checking	28	Did participants provide feedback on the findings?	8
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	N/A
Data and findings consistent	30	Was there consistency between the data presented and the findings?	N/A
Clarity of major themes	31	Were major themes clearly presented in the findings?	10
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	10

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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