Study Protocol

Examining the Health Equity Implications of rapidly emerging COVID-19 Visitation Strategies to Long-Term Care Homes in Ontario: A Protocol for A Mixed-Methods Study

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ABSTRACT

Background: The COVID-19 pandemic has spread swiftly within long-term care (LTC) homes in Ontario, with resident mortality rates 25%. The Ontario Ministry of Long Term Care as well as directors of LTC homes immediately resorted to restricting visitations in an attempt to halt the spread of the disease, but such restrictions made residents feel isolated and lonely. Alternative COVID-19 visitation strategies such as virtual visits, window visits, and designated caregivers emerged shortly after but our understanding of the equity implications of these emerging visitation strategies is lacking.

Objectives: The purpose of this project is to advance our understanding of emerging COVID-19 visitation strategies in Ontario by examining their health equity implications among key stakeholder groups such as residents, their family members, and providers of care.

Methods: We will use an exploratory sequential mixed-methods study design to identify and examine the equity implications of COVID-19 visitation strategies in Ontario by collecting quantitative and qualitative data from key stakeholder groups, such as LTC residents, their family members and designated caregivers, providers of care and LTC staff, and other interest groups. We will collect data using online surveys and one-on-one virtual interviews. Quantitative data will be analyzed descriptively and qualitative data will be coded inductively and deductively using the GRADE FACE instrument as an analysis framework. We will mix our data at the interpretation phase using a narrative weaving approach and present our findings using joint display techniques. Finally, we will seek triangulation and member checking to ensure relevance.

Relevance: Our timely findings will shed light on the impact of emerging COVID-19 visitation strategies and inform knowledge users, such as policy makers, about their health equity implications to promote an equity-oriented decision making process in the future.

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BACKGROUND

The COVID-19 pandemic has had a dramatic health, economic, and social impacts on populations around the world [1]. Long term care (LTC) homes provide continuing care and support to their residents, many of whom are elderly and have cognitive impairment conditions such as dementia [2]. LTC residents are a remarkably vulnerable population to infections and other diseases [2], and the COVID-19 pandemic has disproportionately affected them in Ontario, with 81% of total COVID-19 deaths reported from LTC homes as of June 25, 2020 [3]. A shortage of personal protective equipment and staff, coupled with a limited understanding on how to control this highly infectious virus while simultaneously maintaining the mental wellbeing of LTC residents were all reasons behind the outcome disparities [2].

In order to control the spread of the virus, the Ontario government initially restricted all visitations to LTC residents, but with time, these restrictions morphed into pandemic-sensitive visitation strategies, such as window visits and virtual calls [4]. Although intended to limit the spread of the virus, these strategies inevitably led to social isolation and loneliness causing negative impacts on the mental health and wellbeing of residents, families, and LTC staff [5], and widening their health inequity compared to others living in the community [6]. Alleviating such health inequity requires gaining a better understanding of these emerging COVID-19 visitation strategies and their equity implications.

Our project emerged in an effort to identify and examine the equity implications of rapidly emerging COVID-19 visitation strategies in Ontario. We recognized the need for multi-stakeholder research that provides knowledge users, such as policy makers, providers, and the public with timely findings on how implementing such strategies impact the health equity of key stakeholder groups. These strategies may address the need for social connectedness among residents and allow safe but equitable visitations to LTC homes. This requires patient-centred research that involves engaging stakeholders in the decision-making process [7]. The perspectives and experiences of LTC residents and their family members, as well as staff and providers of care may inform the implementation and adaptation of visitation strategies to long-term care homes in the future.

RESEARCH OBJECTIVES

The objective of this research project is to examine and advance our understanding of the equity implications of emerging COVID-19 visitation strategies in long-term care homes in Ontario. To achieve this objective we plan to answer the following research questions:

1. What are key stakeholders' perspectives on the priority, feasibility, and acceptability, as well as implementation considerations (duration, frequency, number of visitors) of different visitation strategies to long-term care homes during the COVID-19 pandemic in Ontario?

2. What are the experiences of long-term care residents and their essential caregivers of visitation strategies to long-term care homes during the COVID-19 pandemic in Ontario?

METHODS

Study design and process

We have adopted an exploratory sequential (quant → QUAL) mixed methods study design, collecting both quantitative and qualitative data from key stakeholder groups. We selected a mixed method approach to support producing policy-relevant findings related to both implementation (e.g. duration and frequency of visits) and personal experiences of stakeholders using quantitative and qualitative data. By collecting two forms of data from the same sample, we will increase the validity of our findings through triangulation. Furthermore, the qualitative data will complement, contextualize, and deepen our understanding of the trends seen in the quantitative component. We have decided to prioritize qualitative data collection and analysis, a decision which was influenced by the purpose of the study to gain a deeper understanding of stakeholder perspectives and experiences. Our interpretation of data will be centred around actionable statements, "equity implications", that will aim to advance policy and decision making regarding visitation strategies to long-term care homes in the future. The process by which this project will be undertaken and our projected timeline are described in Figure I and throughout the following sections. Our activities will include collecting data using online surveys and virtual interviews. We will report our findings according to the Good Reporting of a Mixed Methods Study (GRAMMS) reporting guidelines [8].

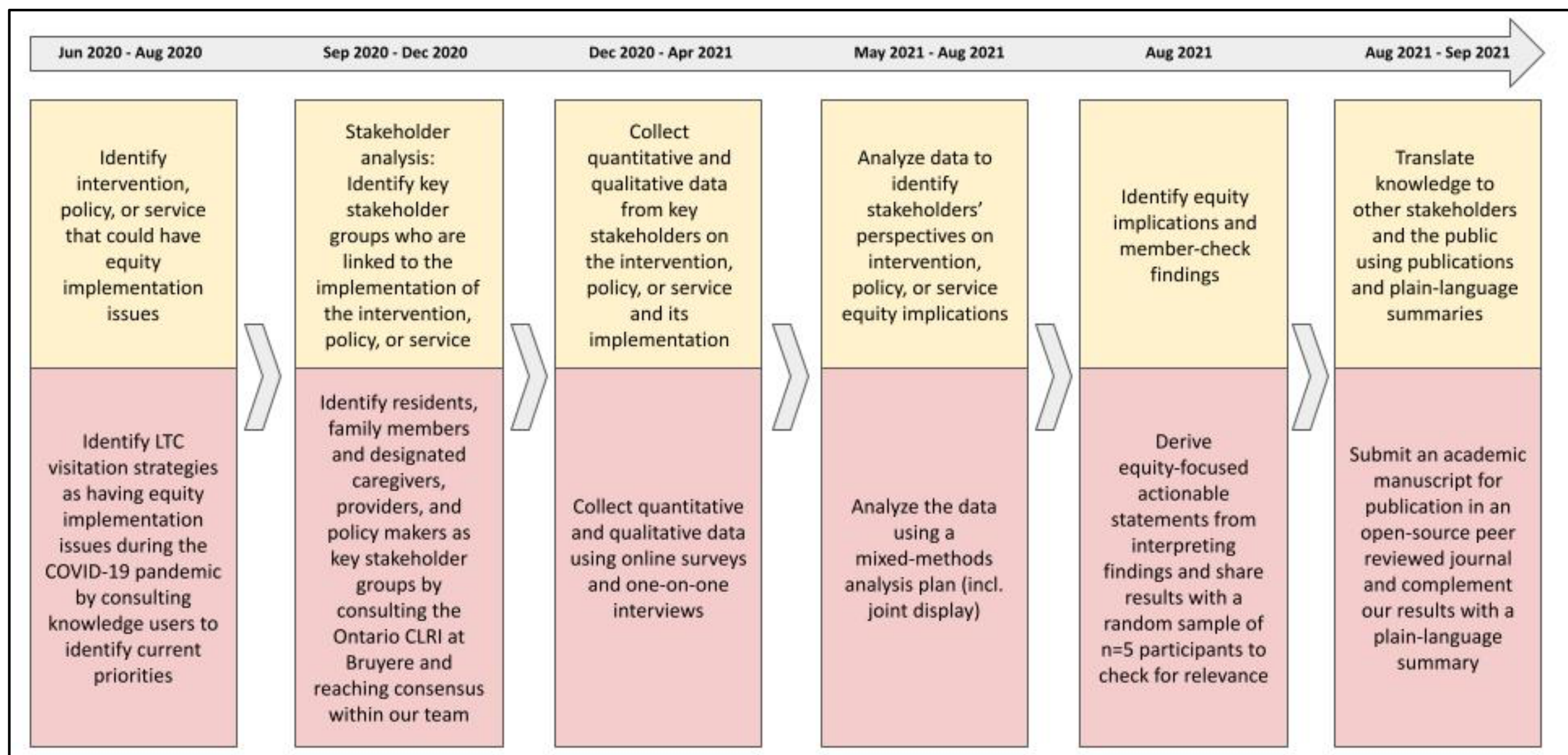

Figure I. Our equity implication mixed methods process and timeline

Ethical approval

This project received approval from the Bruyère Continuing Care (M16-20-043) and the University of Ottawa (H-10-20-6229) Research Ethics Boards.

Theoretical approach to inquiry

We will take a pragmatic stance to inquiry due to its applicability to issues of social justice and its practical decision-making processes attached to research aimed at improving social problems [9]. The primary goal of pragmatism is to create practical knowledge that has utility for action for making purposeful difference in practice [10]. Our research aims to improve the person-centeredness and implementation of public health restrictions and visitation strategies for a vulnerable population presently experiencing an inequitable burden of disease. A major underpinning of pragmatist epistemology is that knowledge is always based on experience [9]. In adopting this stance, we will prioritize stakeholders based on their direct experience with visitation strategies. As a research paradigm, pragmatism is based on the proposition that researchers should use the methodological approach that works best for the particular research problem that is being investigated, and this pluralism is a strength of pragmatism that has several advantages for social justice research [9,11]. It sets an inclusive framework of inquiry that supports interdisciplinary and cooperative research about social injustices [12].

Study setting

This study will take place in Ontario, one of 13 provincial and territorial Canadian health systems. In Canada, jurisdiction over health and health care is a shared responsibility between the federal and provincial governments. While the Canada Health Act defines the health services that must be included by each provincial health insurance program in order to qualify for federal funds, LTC is not included [13]. As such, LTC homes fall within provincial jurisdiction. The province of Ontario has the largest number of LTC homes in the country, with 626 homes providing care and support to more than 115,000 people and their families [14,15]. Since April 24, 2020, there have been 15,332 cases of COVID-19 among LTC residents and 3,781 deaths, representing a case fatality ratio of 25% [16].

Recruitment

Our target population will include key stakeholder groups who are responsible for or affected by visitation strategies to long-term care homes in Ontario [7]. This includes LTC home residents (conventionally called "residents" hereafter), their family members and designated caregivers, LTC home staff and providers of care, and other interest groups, such as content experts, academics and researchers, and policy makers. We will initiate contact with long-term care homes serving the population of Ontario and ask them to utilize their internal and external communication channels (e.g., mailing lists, social media platforms) to recruit participants to the study. In order to participate in the survey, a participant must a) be a resident of the province of Ontario; b) be over the age of majority in the province (i.e., 18 years old); c) be able to communicate in either of the official languages of Canada (i.e., English or French); d) fall under the definition of a stakeholder as described above. We will follow the Total Design Method (TDM) to ensure a higher response rate to our survey [17]. Three separate reminders will be sent to all those who register for the survey at 1, 3, and 7 weeks after initial contact [18]. We have set the target survey sample

size at n=200 participants to detect trends in stakeholders' responses and will initiate contact with a convenience sample of N=250 long term care homes or until our sample size is reached. Furthermore, we will invite a random sub-sample of survey participants to partake in a virtual one-on-one interview. Since the interviews will focus on experiences with visitation strategies, we will invite only stakeholders who are directly linked to the visitation strategy for an interview (i.e. residents, family members, and designated caregivers). We have set the target interview sample size at n=15 participants to ensure qualitative data saturation and redundancy of themes.

Data Collection

To facilitate data collection, our team developed survey and interview guides, both of which are presented in Appendix I and II. Due to the COVID-19 pandemic and its public health restrictions, we will adapt a virtual approach to our data collection by which surveys will be administered using an online platform and interviews will be conducted using audio and video teleconferencing. The survey was developed by adapting the GRADE FACE instrument [19], which captures stakeholders' perspectives on guideline implementation using criteria from the GRADE Evidence-to-Decision (EtD) framework[20]. As such, our survey will collect participant demographics (e.g., age, gender, stakeholder group, and country of birth) and assess their ratings regarding the priority, feasibility, and acceptability of six visitation strategies that had been adapted by long-term care homes in Ontario prior to the commencement of this study. The final list of visitation strategies was compiled by our team using guidance documents from the Government of Ontario, The Ministry of Long Term Care (previously known as the Ministry of Health and Long Term Care) and by consulting our knowledge users at the Ontario Centre for Learning, Research, and Innovation at Bruyère (Ontario CLRI at Bruyère). The list includes virtual visits, essential caregivers, outside visits, window visits, pre-recorded audio or video messages, and staff reading printed out emails to residents. A description of these strategies is presented in Table 1. Participants will use a 4-point Likert scale to respond to questions, such as "*do you think this visitation strategy is a priority/ acceptable/ easily implementable?*" with: yes, probably yes, probably no, and no. Further questions will explore the implementation considerations of each visitation strategy around duration and frequency of the visit and number of visitors allowed. Open boxes allowed participants to share qualitative comments about their responses (Appendix I).

Table 1: Visitation strategy definitions

Visitation strategy	Description
Essential caregivers	A type of essential visitor who is designated by the resident and/or their substitute decision-maker and is visiting to provide direct care to the resident (for example, supporting feeding, mobility, personal hygiene, cognitive stimulation, communication, meaningful connection, relational continuity and assistance in decision-making). Essential visitors are the only type of visitors allowed when a resident is isolating or symptomatic. A maximum of 1 caregiver per resident may visit inside the home at a time [21].
Outdoor visits	A maximum of 2 general visitors per resident may visit outdoors at a time, based on scheduling with the homes. Recognizing that not all homes have suitable outdoor space, outdoor visits may also take place in the general vicinity of the home. Visitors must wear masks and residents should wear a mask, if tolerated[21]
Window visits	Residents can meet a visitor or a small group of visitors at a window within the LTC home.
Virtual visits	Connect by video teleconferencing software, such as Skype, FaceTime, or Zoom.
Audio/video recorded messages	Record an audio or video message and send it to an LTC resident for them to watch/listen to.
Printed emails read by staff	Send a letter by email to someone who lives at an LTC home, and LTC staff read the letter to the resident.

Furthermore, semi-structured interviews will be grounded in primary stakeholders' experiences and use open-ended questions to elicit visitation stories and draw out participants' perspectives by investigating the stories in depth using prompts and follow-up questions (Appendix II). With participants' consent, the interviews will be recorded and transcribed verbatim using Otter.ai software [22]. Participants will have the option to conduct the interview in English or in French, and any interviews conducted in French will be translated and verified by two team members with proficiency in French language.

Quantitative data analysis

We will analyze demographics and quantitative data using descriptive statistics and report results as percentages with 95% confidence intervals for categorical outcomes and means with standard deviations for continuous outcomes. All quantitative analyses will be performed using Microsoft Excel. To facilitate data presentation and draw interpretations from our findings, we will collapse and dichotomize categorical responses to capture positive (yes and probably yes) and negative (no and probably no) ratings. Although survey questions about implementation preferences (i.e., duration and frequency of visits and number of visitors) will be open-ended, we will categorize the responses, post-hoc, into intervals to support the quantification of responses relating to these implementation considerations. Any additional data provided in the open boxes will be dealt with and analyzed qualitatively. It is of note that this is an exploratory study with no a priori hypotheses. We, therefore, will settle for a relatively small sample size, underpowered to detect differences in perspectives between stakeholder groups and only report trends in the data.

Qualitative data analysis

We will apply the principles of framework analysis to analyze the qualitative data from interviews and open-ended survey questions. The framework method is not aligned with a particular epistemological, philosophical, or theoretical approach, making it appealing for pragmatic mixed-method research [23]. It can be adapted for use with deductive, inductive, or combined types of qualitative analysis. Framework analysis is a five stage process of familiarisation with the data, identifying a thematic framework, indexing (applying the framework), charting and mapping, and interpretation [24]. We selected the GRADE FACE instrument as our initial coding framework [19]. This framework was selected for qualitative analysis because the FACE questions formed the basis of the quantitative survey. By using the FACE constructs as the initial deductive coding framework for the qualitative data, we will identify themes that contextualize the quantitative data.

Two team members will apply the framework and inductively open-coded a random subset of N= 5 interview transcripts, coding anything that might be relevant from as many different perspectives as possible. Codes will refer to substantive things (e.g. particular behaviours, incidents or structures), values (e.g. those that inform or underpin certain statements, such as a belief in evidence-based medicine or in patient choice), and emotions (e.g. sorrow, frustration, love) [23]. After coding the first few transcripts, all researchers involved will meet to compare the labels they have applied and agree on a set of codes to apply to all subsequent transcripts. Codes will be grouped together under the FACE categories, which will form the analytical framework. This analytic framework will then be applied to all transcripts in duplicate and independently. All qualitative analyses will be conducted using NVivo software [25].

Integration and interpretation

Quantitative and qualitative data will be mixed at the interpretation stage, allowing for triangulation. All researchers involved in this project will contribute to interpretation, drawing on our interdisciplinary experiences and expertise related to long term care. Our study will integrate the data (survey, comments, and transcribed interviews) through narratives and using the weaving approach, which involves writing both qualitative and quantitative findings together on a theme-by-theme or concept-by-concept basis. Further, we will produce joint displays, explicitly merging the results from the two data sets through a side-by-side comparison to assess the coherence of the two types of data [26]. This assessment of the fit of integration will allow us to assess confirmatory, inconsistent, and discordant findings.

Interpretation and member checking

All contributing team members will meet to interpret our findings. Interpretation will be centered around deriving actionable statements (equity implications) from data that carry relevance to policy and practice. Our team members will be asked to use a health equity lens when interpreting the results and deriving the actionable statements so that such statements will be equity-focused and carry the potential to promote social justice and fairness among LTC residents, their family members, and their providers of care. Furthermore, we will develop a plain-language summary of our results, including the joint displays, and share it with a random sample of n=5 stakeholders who participated in both the surveys and interviews. Participants will be asked to provide any feedback they have about the results and their relevance. Feedback can be received using written (i.e. emails) or verbal (phone or video calls) communications. Any discordance between our findings and the feedback we receive from participants will be highlighted in the publication. Furthermore, we will seek guidance and feedback from Canadian and international content experts in the field of long-term care. Their feedback will help enrich and enhance our data interpretation and presentation, as well as knowledge translation steps following the end of the project.

Researcher reflexivity

This project will be led by an interdisciplinary team of junior and senior researchers and supervised by a physician (K.P.) who provided care to LTC residents during the COVID-19 pandemic. We continue to collaborate with two members (M.F., A.F.) of the Ontario Centre for Learning, Research and Innovation in Long-Term Care at Bruyère (Ontario CLRI at Bruyère) to promote integrated knowledge translation. To align with the Ontario CLRI's strategic goal to support innovative and interdisciplinary learning opportunities, we will integrate medical trainees, international medical graduates, and

undergraduate students into our data collection and analysis teams. The analysis will be co-led by two research associates with quantitative (A.S.) and qualitative (O.M.) expertise.

Competing Interests: No financial competing interests

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Appendix I: CLRI-LTC Visitation strategies research project: Survey guide, adapted from the FACE instrument (Pottie et al., 2021)

Section A - Demographics:

1. My name is (please write your full name) ____________

2. My age is: _______ years

3. My gender is:
    1. Male
    2. Female
    3. Other

4. My preferred language of communication is:
    1. English
    2. French
    3. Other (please specify): ___________

5. My country of birth is:
    1. Canada
    2. Foreign born, please specify _________

6. I am:
    a. A LTC home resident
    b. A family/relative of an LTC resident
    c. A member of Resident associations/patient partnerships
    d. A provider of healthcare (both clinical and managerial)
    e. A policymaker
    f. A principal investigator and or a part of a research team
    g. A content expert/non-profit organization
    h. Medical student
    i. Nursing student
    j. Other (please specify):________

Section B. About visitation during the pandemic

7. (Ask if 6 = a) How often were you visited in-person/via audio call /via video call by your family or friends during the COVID-19 pandemic?

    1. Almost daily (question 14)
    2. Once in two weeks (question 14)
    3. Once in a month (question 14)
    4. Never (question 15)
    5. Others, please specify__________________ (question 14)

8. (Ask if 6 =b) How often have you visited (in person/ via audio call/video call) your loved ones residing in the long-term care institution?]

    1. Almost daily (question 14)
    2. Once in two weeks (question 14)
    3. Once in a month (question 14)
    4. Never (question 15)
    5. Others, please specify__________________ (question 14)

9. (Ask if 7/ 8 is not equal to 4) Please tell us about your experience with those visitations. (open ended)

10. Now, I would like to know your perception about visitation strategies/interventions that can be implemented during a situation like COVID-19.

(All optional)

<table>
<tr><th></th><th>10. Should this intervention be a priority for a LTC facility?</th><th>11. Is this intervention acceptable to you?</th><th>12. Do you think this intervention can be easily implemented in nursing homes/LTC?</th></tr>
<tr><td>A. Virtual visits (via Skype, Facetime, Duo, Zoom, What's App)</td><td colspan="3" rowspan="6">Participants can respond with:

1. Yes
2. Probably yes
3. Probably no
4. No

If participant choses options 3 or 4 for question 12, ask:
Why do you think it is not possible or probably not possible to implement this strategy?</td></tr>
<tr><td>B. Window visits</td></tr>
<tr><td>C. Audio/video recorded messages</td></tr>
<tr><td>D. Family member visits with appropriate PPE* as a designated caregiver</td></tr>
<tr><td>E. Staff reading to residents printed out email messages received from families</td></tr>
<tr><td>F. Outdoor visits</td></tr>
</table>

<table>
<tr><th></th><th>13. What should be the duration of this visit (in minutes)?</th><th>14. What should be the frequency of such visits in a month?</th><th>15. How many visitors should be allowed per month for such visits?</th></tr>
<tr><td>A. Virtual visits (via Skype, Facetime, Duo, Zoom, What's App)</td><td rowspan="6">This is an open-ended questions. Participants respond as they see fit.</td><td rowspan="6">Participants can respond with:
1. Once a month
2. Twice a month
3. Thrice a month
4. Daily
5. Other, please specify: --------------</td><td rowspan="6">This is an open-ended questions. Participants respond as they see fit.</td></tr>
<tr><td>B. Window visits</td></tr>
<tr><td>C. Audio/video recorded messages</td></tr>
<tr><td>D. Family member visits with appropriate PPE* as a designated caregiver</td></tr>
<tr><td>E. Staff reading to residents printed out email messages received from families</td></tr>
<tr><td>F. Outdoor visits</td></tr>
</table>

Appendix II: CLRI-LTC Visitation strategies research project: Interview guide

Interviewer's initials: _ _

Participant's ID: _ _ _ [For use by the central research unit only]

Date of interview: MM/DD/YYYY

Interview medium (Please check ONE):
- ❑ Video conferencing
- ❑ Phone call

Participant's stakeholder group:
- ❑ LTC staff/ provider of care
- ❑ LTC resident
- ❑ LTC resident's family member (designated caregiver)
- ❑ Other: Please specify ___________________

Recording:
Make sure you are recording the interview and using Otter for transcription

Introduction:
Hello, My name is _______ and I am working on a study examining the perspectives of different stakeholders regarding visitation strategies to long-term care homes in Ontario.

Obtaining Informed Consent:
- ➔ Please explain the nature and objectives of the study to the participant.
- ➔ If the participant has any questions, please answer them to the best of your knowledge.
- ➔ Ensure that the participant is aware of his/her rights to refuse answering any question or terminate the interview at his discretion and anytime.
- ➔ Emphasize the participant's privacy and confidentiality and describe the process of de-identifying his/her response from his/her name and other identifiers.
- ➔ Explain that the interview is being recorded and only research staff will have authority to view the recordings. Describe the method of safe-keeping the recordings until termination
- ➔ Ensure the participant is aware of whom to contact to gain more information or report any issues or concerns.
- ➔ Acquire the informed consent. If informed consent was acquired, please proceed to the interview.

Interview questions:

1. Tell me how changes to visitation strategies have impacted [your work/ your relation with your family member/ quality of life]. (pick the one most relevant to participant)

2. Can you tell me a story regarding your experience with visitation to long-term care homes during COVID-19?

   Now let's talk about these visitation strategies and quality of life in more detail;

3. In the survey, you answered questions about "designated caregivers" or **family member visits with appropriate personal protective equipment**. Tell me more about your response? [Probe for understanding of their experience]

   Follow-up to question 3: Please tell me why you think family member visits with appropriate personal protective equipment should be [this long/ this frequent/ with this many visitors]? [Probe for more stories]

4. In the survey, you have answered questions about **virtual visits**. Tell me more about your response?

   Follow-up to question 4: Please tell me why you think virtual visits should be [this long/ this frequent/ with this

many visitors]?

5. Do you have any comments or stories about window visits that you would like to share?
6. Do you have any comments or stories about audio or video recorded messages?
7. Do you have any comments or stories about staff reading email messages received from families?
8. Do you have any comments or stories about outdoor visits?
9. Are there any **other visitation stories or comments** you would like to share?

Thank the participant for participating in the interview. End the recording and Otter.