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The Impact of Covid-19 on Inter-Organizational Coordination in Swedish Eldercare: A Mixed Methods Study

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Abstract

Background

In Sweden, healthcare provision for the frail elderly entail's coordination between municipalities and regions. Despite formal agreements, deficiencies persist in achieving practical coordination, leading to adverse effects on patients and increased costs. The Covid-19 pandemic further strained the health- and social care system, exposing shortcomings in eldercare coordination. This paper explores the impact of crises on inter-organizational coordination between long-term organizational collaborators, operationalized through medical care coordination in Swedish nursing homes during the Covid-19 pandemic.

Methods

The study examines coordination between regionally employed physicians and municipal nursing home nurses through a mixed methods approach. A survey was sent to regional physicians and municipal nurses working with eldercare, as well as managers at both nursing homes and healthcare centers. A total of 170 participants responded to the survey, and 20 participants took part in a subsequent follow-up interview.

Results

Findings indicate that medical care coordination was perceived to have functioned relatively well during the pandemic and even to have improved afterward. Key factors contributing to this outcome include the adoption of innovative solutions, such as digital technologies, to address both staff shortages and increased demand brought on by the crisis. Trust and shared cultural values among staff fostered collaboration, while personal engagement became crucial when compatibility was lacking. The professionals also highlighted improved communication channels and enhanced coordination as a means to combat uncertainties during the crisis.

Conclusions

The perception of a well functional crisis coordination among the professional's contrasts with more critical views in general society. This discrepancy might be attributed to different expectations during crises; professionals adhere to specified standards, values and beliefs within their specialized cultures. Professionals might therefore have a more nuanced perception of what they believe constitutes good medical care coordination. Theoretical contributions include integrating the crisis management literature with inter-organizational coordination in healthcare. The approach provides new insights to clarify the

impact of crises on medical care coordination, and identifying important factors regarding inter-organizational coordination during crises.

Introduction

The Covid-19 pandemic has had a profound impact on society, with older adults being particularly vulnerable.[1,2] The reasons for this vulnerability include underlying health conditions, social isolation, and a rapid spread of the virus in long-term facilities where many elderlies resided, but also challenges in access to- and the provision of appropriate healthcare services.

The pandemic's widespread influence has exposed the fragility of healthcare systems globally, testing their functionality and capacity.[3] Amid this global crisis, the crucial role of organizational coordination in facilitating healthcare during crises became particularly apparent.[4,5] The pandemic has underscored the necessity of coordination between health- and social services in order to deliver high-quality care to the vulnerable elderly population affected by Covid-19.[6,7] Innovative approaches, such as the deployment of mobile medical teams for in-home visits or provision of enhanced medical care within nursing facilities, have emerged as important strategies to this end during the prolonged crisis.

The literature on crisis management investigates the processes through which organizations navigate disruptive and unforeseen events, such as the Covid-19 pandemic.[8] This event posed a threat to the healthcare organization and its stakeholders, prompting a focused exploration of strategies to mitigate potential harm. Within this literature, however, coordination is considered both as a problem and a solution.[9] Aldrich (2019), suggests that major crises can benefit coordination, by creating a sense of urgency and pushing organization to work together.[10] While there are potential advantages to coordination in times of crisis, it remains clear that success in coordination still poses a great challenge. The crisis requires a government response with new rules, structures and expectations, which can conflict with the “old-way” of governance. Despite the generally well-intentioned nature of most coordination efforts, they risk becoming counterproductive if actors fail to coordinate effectively. Often, coordination failure during crisis poses a threat to worsen an already dire situation.[9]

Studies investigating coordination during crises typically distinguish between inter-organizational and intra-organizational coordination. Studies on inter-organizational have mainly focused on coordination between state actors, civil society, humanitarian organizations, and emergency agencies who are compelled to work together, particularly during natural disasters such as earthquakes or tsunamis.[10,11] The intra-organizational literature, on the other hand, often focuses on the coordination that emerges within individual actors such as healthcare systems, during times of crises. While the literature in both these fields is extensive, neither of these strands portrays the impact of crises on inter-organizational coordination between organizations that have been working closely together for a long time, even *before* a crisis, in complex policy areas such as the case with health- and social care.

In Sweden, healthcare services for the frail elderly are delivered by both municipalities and regions, heightening the need for effective coordination of care. The regions serve as the main provider of healthcare, while municipalities are responsible for social care including nursing homes and in-home care.[12] Over the past years, there has been recurring criticism of coordination in Swedish eldercare.[13] Despite a long history of formal coordination agreements and plans, there are still shortcomings in the practical coordination of services for elderly patients between the regions and the municipalities, resulting in significant suffering and adverse medical effects for patients, as well as high costs to the system.[14–16] Prominent barriers to successful coordination include staff shortages, a lack of incentives to promote coordination, and suboptimal solutions for municipal eldercare to involve regional physicians.[12]

The Covid-19 pandemic has placed significant stress on the Swedish health and social care system. The eldercare system in particular has been criticized for not protecting older residents to the necessary extent during the pandemic.[15] During the pandemic the media frequently portrayed shortcomings in eldercare and commonly depicted scenarios of insufficient actions taken to reduce spread of disease or even breakdowns of eldercare wards.[17,18] The perception of failure, during the Covid-19 pandemic, is further exacerbated by the national Covid-19 Commission, which has identified substantial issues with coordination during the pandemic, focusing in particular on the fragmented organization and unclear responsibilities within eldercare.[13,19] Although, the general picture of eldercare in Sweden during the Covid-19 pandemic was that of a failure, exactly how coordination in Swedish eldercare failed, and how it was impacted by the pandemic remains unclear.

This study aims to investigate how the Covid-19 pandemic impacted the coordination between health and social care providers within eldercare. It seeks to uncover both the facilitators that aided coordination and the barriers that hindered it, in the particular context of a prolonged crisis such as the pandemic. The study is mainly focused on the impact on coordination during Covid-19, but also on the possible impact on coordination in the aftermath of the pandemic.

The paper is structured as follows. First, we review the literature on coordination during crises and highlight the different strands of research. We then formulate the case of medical care coordination in Swedish nursing homes during the Covid-19 as an example of coordination in eldercare during crises. Thereafter, the interview methods used to understand the perception of the coordination during crisis and how it evolved are presented. Utilizing the framework from Moshtari & Gonçalves (2017) on coordination during crisis, we group the findings from the interviews to identify barriers to- and facilitators for coordination during crises.[11] Finally, we present the results which suggest that coordination in eldercare mainly occurs on three dimensions, and that in contrast with the media's perception of eldercare, participants believed medical care coordination to function better than expected.

Coordination in crisis management

Pearson and Clair (1998) defined an organizational crisis as "a low probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect and means

of resolution as well as by a belief that decisions must be made swiftly.".[20] The Covid-19 pandemic can, in line with this definition, be described as a major organizational crisis which tested all health care systems.[5,21] Covid-19 was declared a *Public Health Emergency of International Concern* on January 30, 2020, and remained so until May, 5, 2023.[22,23] The pandemic impacted society with varying intensity and in multiple waves around the world, but a decrease in disease transmission was observed since the vaccines became available in late 2020.[24]

During the Covid-19 pandemic, numerous measures were implemented to maintain high-quality healthcare services. A commonly used concept in crisis management is resilience, which can be defined as the ability to absorb, adapt, and transform to cope with shocks to ensure sustained performance.[21] Factors associated with the resilience of an organization in a crisis are material and human resources, leadership in planning and managing information, and coordination.[4] Barasa et al (2018) argue, however, that coordination can be equally, or even more important than resources.[4] This is, in part, because successful coordination facilitates the mobilization of both material resources between the organizations that collaborate, as well as utilizes the social networks amongst the organizations to increase the transfer of knowledge. Boin and Bynander (2015) raises questions about coordination during crisis and suggest that when crisis response fails, coordination is often identified as both the underlying problem, and the recommended solution.[9] However, apart from some positive examples, coordination during crises often tends to falter, resulting in inadequate crisis response.[9,10,25]

The breakdown of effective coordination in crisis can be attributed to a multitude of contributing factors. Aldrich (2019), for instance, argues that urgency is a key factor that drives the need for coordination during crises.[10] Based on his research, he suggests that minor crises might be less successful in achieving effective coordination compared to major crises since they do not bring about enough urgency among key actors to mobilize coordination efforts. Boin & Bynander (2015) partially support this claim and acknowledge that a major disaster generates a willingness among all actors to assist and coordinate services.[9] However, they emphasize that even though urgency can drivee coordination, major crisis often results in a capacity deficit, for instance of staff or certain organizations, that needs to be replenished by actors who may never have coordinated their actions before, making it challenging to achieve successful coordination. With the challenge of a new decision-making structure, new actors coordinating and new tasks to coordinate, there is a significant risk of fragmentation and distrust among coordinating organizations, which can result in coordination failure [9]

While Aldrich (2019) and Boin & Bynander (2015) provide different explanations for when coordination fails or succeeds, additional research on coordination in crisis management delves into a spectrum of barriers and facilitators to both intra- or inter-organizational coordination.[9,10] The literature specifically focusing on intra-organizational coordination, which refers to coordination within a single organization, investigates how different parts, such as departments and specialized services within a complex organization, coordinate their actions during a crisis. For instance, Yousefian et al. (2021) conducted a systematic review developing a framework of factors that affect intra-organizational coordination in the

healthcare sector during crises.[26] However, their framework does not encompass the barriers and facilitators that impact coordination between *different* organization that already collaborated *before* the crisis, as exemplified by health and social care for the frail elderly population. In this regard, existing studies concerning inter-organizational coordination often center on scenarios where previously unacquainted organizations are compelled to collaborate due to exigent crises. However, these studies pose a challenge as they are conducted on actors which lack prior familiarity with one another. An illustrative example of this type of coordination occurred during the 9/11 terror attacks when the Coast Guard and private boats effectively coordinated the evacuation of 500 000 people in a single afternoon.[9]

An alternative approach is to select a non-crisis healthcare-focused coordination framework. Auschra (2018) created a framework for inter-organizational healthcare coordination, categorizing barriers from clinical to administrative and political levels.[27] However, in this study we are primarily interested in micro and meso-level coordination, i.e. coordination between health and social care providers at the "lower" levels, i.e. physicians and nurses working in nursing homes. In this paper we instead draw on Moshtari & Gonçalves (2017) framework which revolves around three pivotal factors exerting influence on coordination.[11] This framework offers a more effective approach to tackling the intricacies of crisis-related facilitators and barriers to coordination. While there are more appropriate frameworks for analyzing coordination in healthcare,[27,28] the impact of the Covid-19 crisis has emphasized the importance of relying on a more crisis-oriented framework, such as the one proposed by Moshtari & Gonçalves (2017).[11] Although primarily designed for humanitarian organizations, their framework can contribute to the healthcare literature by delving into crisis-specific barriers and facilitators to coordination. Considering the argument for a crises-oriented framework, another viable alternative could have been to select a framework from the specific crisis-management literature. Numerous studies have tried to capture how to best manage a crisis and listed important factors such as crisis preparedness, communication and learning.[29–31] However, it is important to note that this literature primarily focuses on crisis-management in a general context, which diverges significantly from the context if inter-organizational coordination in healthcare. By adopting a crises-oriented framework specifically designed for inter-organizational coordination, our hope is to identify a framework that best suits our specific case. We have, however, adjusted the framework somewhat to better suit our case and to make it practically applicable, see Table 3.

Conceptual framework for inter-organizational coordination in crises

Moshtari & Gonçalves (2017) present a conceptual framework based on a meta-analysis of 28 articles, aiming to categorize facilitators and barriers to inter-organizational coordination during crises.[11] The framework is comprised of three factors: 'contextual factors', 'inter-organizational' factors, and 'intra-organizational' factors, with coordination efforts positioned at its core, see Fig. 1. This combination helps to better understand the facilitators and barriers that drive coordination. By adopting a more comprehensive perspective on crisis coordination, we reveal a more profound understanding of its mechanisms and dynamics. Unlike many other frameworks that concentrate on just one or two aspects

of coordination, such as management approaches or how organizations interact, this framework takes a more comprehensive approach by also including contextual factors.

In the framework, the contextual factors are determined by the broader conditions, such as supply and demand for coordination actions or the timing of the crisis. Inter-organizational factors highlight the interaction among the coordinating parties, such as the relationship between staff and the formal arrangements in the form of responsibilities or guidelines. Lastly, intra-organizational factors encompass aspects within each individual organization, and reveal available resources and staff capabilities. The conceptual framework as presented by Moshtari & Gonçalves (2017) is found in appendix 1.[11]

Eldercare in Sweden: A case of established inter-organizational coordination

In Sweden, responsibility for eldercare is divided between the regions (healthcare) and the municipalities (social care). The 21 regions have the primary responsibility of providing both inpatient and outpatient healthcare services to the public. On the other hand, the 290 municipalities are responsible for social care which includes nursing homes and in-home care.[12] This includes providing services and care that older adults cannot do themselves, such as personal hygiene, dressing, and cooking. The municipalities are legally obligated to provide simpler forms of healthcare services to residents in nursing homes and individuals receiving home care, such as providing medications, wound dressing, tube feeding, checking vital signs, and managing catheters. However, municipalities are not allowed to employ their own physicians; instead, they must reach agreements with the regions regarding the medical service provided by physicians.[12]

The agreements between the regions and the municipalities state that the regional physicians are allocated a time each week, during which they are intended to visit the nursing homes in the municipality and give medical care to the residents living there. The coordination that takes place between the two organizations, mainly between the physicians from the regions and the nurses within the nursing homes is in this study referred to as “medical care coordination”. These staff groups then meet and coordinate the medical care for the patients. Physicians can among other things help with referrals to hospital and medical prescriptions, while the nurses have an overall knowledge about the patient. This division of responsibilities, where physicians belong to the regions and nurses to the municipality, makes everyday care difficult and relies on well-functioning coordination. The need for coordination has led to persistent and ongoing collaborative efforts among municipalities and regions at a higher, more administrative level. This has resulted in the creation of formal coordination agreements and communication channels. For instance, all regions have currently entered into agreements with their constituent municipalities to ensure a certain number of physician visits per week at nursing homes. The Swedish eldercare system can thus be regarded as a representative case of well-established formalized inter-organizational coordination in the field of eldercare.

In the Swedish case of eldercare, where already established coordination structures exist, the division of responsibilities during a potential crisis is outlined by the so-called ‘responsibility principle’

(*ansvarsprincipen*). According to this principle, any organization responsible for a specific activity under normal conditions, is also responsible for that activity during a crisis. In the context of eldercare coordination, the responsibility of social care remains with the municipality, while the healthcare falls under the jurisdiction of the region. Barriers to coordination in Swedish eldercare

Despite the presence of established channels and coordination agreements, eldercare coordination in Sweden continues to face persistent difficulties. Several government reports indicate that inadequate coordination in eldercare has had negative effect on patients, resulting in increased hospital readmissions and a lack of person-centered care.[14–16] The issue of coordination was particularly critical during the pandemic, as criticism arose that some physicians refused to visit nursing homes due to fear of infection. Additionally, there were concerns that patients were not being referred to hospitals as necessary.

Barriers to coordination occur on the micro, meso, and macro-levels.[32] Eldercare coordination the micro-level encompasses daily operations, where physicians and nurses tend to the patients care and nursing needs at nursing homes. Meanwhile, the meso-level involves managers from nursing homes and healthcare centers working together to facilitate inter-organizational coordination between the organizations. Finally, the macro-level entails municipalities and regions collaborating to develop more general agreements for coordinated action in eldercare.

Barriers for coordination in eldercare can encompass different things, such as legal considerations (different laws to use as a basis for decisions between the regions and municipalities), organizational factors (involvement of two different organizations) and cultural factors (involvement of different professional groups). Previous reports[13] show large problem with coordination in Swedish eldercare. Among other things, barriers for coordination stem from staff shortages among all professional groups including physicians, nurses, and assistant nurses.[13] This scarcity of staff poses challenges in establishing stable coordination systems. Another barrier is the lack of financial incentives for organizations to engage in coordination, leading to a lack of interest in coordination efforts for the benefit of the patient.[12] Both of these barriers hinder the involvement of the regional physicians crucial for achieving successful medical care coordination given that municipalities are unable to employ their own physicians. Additional criticism has been directed at medical care coordination in eldercare, with specific concerns about physicians spending insufficient time with residents in nursing homes.[13] Sweden's Health and Social Care Inspectorate has also raised concerns about the country's medical care coordination efforts, highlighting issues with follow-up on measures, shortcomings in information exchange between agencies, and an unclear allocation of responsibilities.[33]

Methods

Design

The study adopted a mixed-method approach, using data from both surveys and interviews.[34] To investigate coordination within eldercare during a crisis, the study focused on the case of medical care coordination in eldercare during the Covid-19 pandemic, more precisely the coordination between regionally employed physicians (healthcare) and nurses operating within municipal nursing homes (social care). As illustrated in Fig. 2, coordination takes place at different levels and between different organizations. However, the aim of this study was mainly to understand the 'medical care coordination' between physicians and nurses during the Covid-19 pandemic, on the micro level. This coordination could include discussions about individual patients, such as decisions about palliative care, referrals to other caregivers, or decisions regarding medical intervention (e.g., oxygen or medications).

Some of the results include issues that are more at the meso level. In these cases, the discussion revolves around matters of a more administrative nature, such as how to implement guidelines or agreements and create favorable conditions for medical care coordination at the micro level.

Sample and data collection

A survey was conducted to examine if and how the pandemic affected coordination between physicians (healthcare) and nurses (social care) in nursing homes for the older adults in Sweden. A sample of three regions were chosen based on their geographical location, size and similar median Covid-19 mortality rates.[35] The survey was sent to regional physicians and municipal nurses working with eldercare, as well as managers at both nursing homes and healthcare centers, between June and October of 2022. The survey was carried out in two phases. First, participants whose addresses were retrievable from either the region or the municipality were invited, and in the second phase participants where address information was unavailable were contacted via an intermediary person within the region or municipality who assisted in sending out the invitation. To view the full survey, see appendix 2. Participants were informed that the study was approved by the Swedish Ethical Review Authority (dnr. 2022-01791-01).

Semi-structured interviews were conducted via online platform Zoom and had a duration of 18 to 37 minutes (in average 26 minutes per interviews). Selection of interview participants was based on their stated willingness to participate in a follow-up interview after completing the survey. A total of 35 participants received interview requests. The interviews consisted of approximately 15 targeted questions, and subsequent follow-up questions. During interviews participants were asked about facilitators and barriers to coordination during the crisis, and background questions regarding their role in medical care coordination. Two pilot interviews were conducted with a manager and a nurse, to assess the validity. After the pilot interviews, some questions were revised to better suit the aim of the study.

Analysis

The aim of the survey was to capture how the Covid-19 pandemic impacted the coordination between health and social care during the pandemic, but also the perceived coordination statues in the aftermath of the pandemic.

The first part of the survey investigated participants' roles and experiences of current care coordination. This was followed by an assessment of medical care coordination during the crisis, evaluating if the crisis improved, deteriorated or had no impact on coordination. In addition, questions examining commonly assigned tasks within medical care coordination were analyzed comparing the year 2019 and 2022, chosen to capture pre- and post-pandemic levels of coordination. A Wilcoxon signed-rank test was utilized to determine whether there was a significant difference in the median values between the years. Descriptive statistics were calculated consisting of median and mean values, as well as the standard deviations and mean differences.

The aim of the qualitative analysis was to discern barriers and facilitators with regard to medical care coordination in eldercare during the crisis. The interviews were transcribed using a semi-verbatim approach, meaning that filler words and false starts were removed from the transcription. The initial phase of the analysis utilized a deductive approach, employing the conceptual framework of Moshtari & Gonçalves (2017) to classify the material according the pre-existing factors and categories within the framework, see appendix 1.[11] While the framework was extensive and encompassed numerous elements, the subsequent phase employed a more inductive approach. This involved adjusting and refining categories and subcategories to suit the unique context of medical care coordination within an eldercare setting. Some categories, such as 'use of funds' and 'inter-organizational competition,' were removed, as they did not align with the case of an eldercare setting. Additionally, the category 'environmental unpredictability' was excluded because it fell outside the scope of participants´ expertise, as it involves information on a more macro-level, with subcategories such as 'political environment' and 'timing of the crisis'. The two categories 'operational compatibility' and 'strategic compatibility' were merged into one category, as most subcategories of 'operational compatibility' aligned with the concept of 'shared cultural values' within 'strategic compatibility'. Meanwhile, the categories 'unclear benefits of collaboration' and 'collaboration capabilities' were renamed to more accurately reflect the subcategories within them. Finally, the subcategories within each category were rephrased to adopt a broader perspective, reducing their reliance on specific examples, which was the approach taken in the original framework.

Non-response analysis

To address the low survey response rate, we conducted a non-response analysis. This analysis encompassed two key components: first, we conducted telephone interviews with randomly selected participants who chose not to respond to the survey. During these interviews, participants cited three primary reasons for non-response. They mentioned either missing the survey, lacking the time to complete it at the time of its distribution, or believing that the survey should have been directed to another individual. Second, we scrutinized the email addresses used for survey mailings. Our findings revealed that 12–22% of the email addresses used for survey mailings were categorized as 'invalid', indicating that it is a challenge to find correct contact information in the target population. Results from the non-response analysis imply that the actual response rate was probably higher than the calculated rate.

Results

In total, 170 respondents participated in the survey. Among the collected responses, 48% were from nurses, 23% from physicians, 22% from nursing homes manages and 6% from healthcare center managers. The survey results reveal a low response rate; within the group receiving a personalized invitation, a mere 19% of participants responded. Out of the 35 respondents asked to take part in an interview, 20 participants from the four professions took part, see Table 1.

Table 1
presents the characteristics and total number of participants

Roles	Participants interviewed	Participants surveyed
Nurses	6	82
Managers at nursing homes	7	38
Physicians	5	39
Managers at healthcare center	2	11
Total	20	170

The impact of Covid-19 on coordination

The responses received from the survey indicate that medical care coordination was perceived to work quite well in the aftermath of the pandemic. Specifically, 86% of participants reported medical care coordination as functioning moderately to very well, while only 13% reported poor or very poor performance. There was no discernable difference between the regions and only a small difference between the different participant groups, and results will hereafter be presented as one group. When examining the impact of the pandemic on medical care coordination, 48% of the participants reported no discernible effect, while 7% reported deterioration, 13% reported improvements, and lastly, 13% of participants reported both improvements and deterioration.

Questions were rated on a scale of 1–7, resulting in mean scores ranging from 4.57 to 6.31. The time allocated for medical care coordination by physician in practice received the lowest ranking, while good relations between physicians and nurses garnered the highest ranking. The overall standard deviation was 1.776, with a range from 1.298 to 2.013, see appendix 3. The comparison of commonly assigned coordination tasks between the years 2019 to 2022 found a slight positive change in most of the coordinating tasks over time, but there was only a statistically significant difference in two of the items: ‘clarity of agreements and documents after the crisis’, and ‘accessibility of transferring of information’, see Table 2. The analysis of the survey data thus found no evidence of a change in coordination tasks between 2019 and 2022 except for in communication and documentation. To summarize, the survey illustrates that the pandemic did not seem to significantly alter how medical care coordination was perceived to function once the crisis had eased with the exception of documentation and information transfer.

Table 2
presents the results from a Wilcoxon signed-rank text, comparing the year 2019 and 2022

Question	Mean difference	Wilcoxon signed-rank test p-value
7.1 Agreements or other documents are clear.	0,026	0.003**
7.2 Emergency situations works well.	-0,03	0.206
7.3 Time allocated by contract corresponds to the needs.	0,011	0.455
7.4 Time allocated in practice corresponds to the needs.	0,002	0.252
7.5 The staffing of nurses is sufficient for coordination.	0,006	0.769
7.6 Same physician who provides medical services.	-0,005	0.810
7.7 Same nurse who interacts with the physician.	0,132	0.706
7.8 Physicians see patients to a sufficient extent.	0,038	0.404
7.9 Physicians and nurses getting in contact in daily work.	0,029	0.052
7.10 Transfer of information works well.	0,032	0.017**
7.11 Good relationship between physicians and nurses.	0,132	0.137

* For original survey questions see appendix 2.

** = $p < 0.05$ is considered significant.

Facilitators and barriers in coordination during the Covid-19 pandemic

The results from the survey indicate that medical care coordination was perceived to function quite well overall, with a majority of participants rating it as working moderately to very well. The pandemic does not seem to have been detrimental to coordination, but rather improved two aspects: documentation and communication. This rather surprising result rendered a further question; why did the pandemic not deteriorate collaboration? The qualitative part of the study aimed to address questions about the aspects of coordination that contributed to the organizations' effective function through a prolonged crisis. The findings from the interviews were classified based on the framework formulated by Moshtari and Gonçalves (2017) into 'contextual', 'inter-organizational' and 'intra-organizational' factors.[11] Table 3 provides a summary of the factors, categories and subcategories included in the conceptual framework, adapted and utilized in the analysis of the study.

Table 3
presents the conceptual framework used in the study, adapted from Moshtari and Gonçalves (2017)

Contextual factors	Inter-organizational factors	Intra-organizational factors
Supply - Supply of coordinating actions during crises	**Compatibility** - Level of trust - Shared cultural values	**Attitudes towards coordination** - Engagement to medical care - Priorities for coordination
Demand - Increased demand for coordinating actions during crises	**Partners' power dynamic** - Hierarchies between the parties	**Available resources** - Staffing levels - Knowledge - Workload
	The coordination processes - Roles and responsibilities - Routines and guidelines - Communication	**Management and organization** - Leadership - Bottom-up management

Contextual Factors

The contextual factors highlight the setting in which medical care coordination in eldercare operates. These factors primarily consist of elements that contribute to the crisis, including uncertainties about the required extent of medical care for residents and the capacity of various organizations to deliver said medical care, i.e. supply and demand factors.

Supply

The supply category was defined by the amount of medical care that either of the organizations could provide. In the Swedish context, the allocation of staff and services is predetermined based on each organization's budget – that is, the budgets of the regions and municipalities. The provision of services to the residents is then managed by agreements between the region and municipality, outlining the number of allocated hours that physicians can spend in the nursing homes. According to the participants, centralized management of supply could lead to a mismatch with actual need creating a barrier for coordination, as pointed out by a manager at a healthcare center:

“Then it's always the case that the eldercare wants more time with physicians, and we [the healthcare center] *resist and say no, based on how the money bag is allocated...” – IP14*

During the prolonged crisis, supply shortages would frequently emerge due to staff absences being caused by illness or virus exposure. As the supply of staff and services were reduced, participants found it harder to coordinate services. Despite the challenges to coordinating services during the crisis, many of the participants insisted that the organizations were able to maintain their functionality to a significant extent and even create innovative solutions for coordination, such as increased use of digital communication.

Demand

Demand was defined by the amount of medical care that the elderly residents within the eldercare needed, as evaluated from the perspective of the respondents. As the medical care needs of the residents changed over time, participants emphasized that the demand was rarely consistently fulfilled. Participants stated that in situations where the demand could not be met, it had the potential to lead to a diminished quality of medical care for the residents. During the crisis, demand for medical care was heightened due to transmission of the virus, which none of the organizations were prepared for. Some physicians however pointed out that, from a medical perspective, the disease did not appear to be more challenging to manage then other diseases. The strain on the organizations was primarily due to the increased demand resulting from a larger number of patients falling ill. This heightened demand overwhelmed the organizations and made it more challenging for physicians to provide timely treatment to patients at the nursing homes within their allocated time.

Inter-organizational factors

Inter-organizational factors encompass the dynamic interactions between organizations during times of crisis. This involves not only the relationships between the professions but also other arrangements that enable coordination, such as how to communicate or what routines to follow. In terms of inter-organizational factors, three distinct categories emerged.

Compatibility

The compatibility category pertains to the interpersonal relationship among professionals engaged in coordinating services within eldercare. In the analysis, *level of trust* was perceived as an important facilitator for coordination, creating an outlet for nurses to ask physicians for more help or physicians to better understand the patient’s illness through the nurse’s knowledge. Higher levels of trust further established a sense of security and stability among the nurses and the physicians. Trust was frequently regarded as crucial given that management oversight was minimal and physicians and nurses had to rely on each other for such things as transfer of information or emergency situations. As the pandemic began, trust was seen as crucial as it mitigated the stressful situation arising from uncertainty. Remarkably, the crisis could also give rise to changes in trust, as participants described an increased appreciation and understanding of each other´s roles.

“Because we had extra work and difficulties from both sides, we learned to have a little more tolerance towards each other, to understand each other´s responsibilities and obligations a little more concretely, because it is quite concrete, and it was not before” – IP2

Shared cultural values between physicians and nurses were key to ensuring the willingness of both parties to coordinate effectively together and maintaining a shared belief in their approach. The joint culture meant that both physicians and nurses had similar expectations of each other and on the medical care they provided, which in turn increased trust. Shared cultural values also culminated in staff feeling like being a joint group, which in turn strengthened them and their coordination efforts. During the crisis, some participants stated that the crisis had a positive impact on their shared cultural values, as everyone was working toward the same goal. A manager at one of healthcare centers said:

“I think it's about a common view of what quality you want and where you are going… we have decided together with our municipality as well. And that we pitch in the resources to match and that they do the same.” – IP8

Partners’ power dynamic

The interviews revealed a status *hierarchy between the parties* which acted as a barrier to coordination, stemming from the fact that the municipalities were not allowed to employ their own physicians. Physicians were instead contracted by the municipalities, making the eldercare nurses reliant on physicians to provide the necessary medical care for the residents, creating a hierarchy of dependency. The lasting crisis put a further strain on the relationship, causing the nurses to be more reliant on the physicians for medical services, during a period of high uncertainty. Although trust in general improved during the crisis, participants expressed frustration at the systemic level of medical care coordination, stating that the power disparity became more apparent during the crisis due to physicians being the only ones with the medical expertise, which was a problem due to the increased need of medical services.

The coordination processes

Within the realm of the actual coordination process, participants described the setup of medical care coordination and how organizations managed and integrated various activities and tasks. Participants discussed the importance of clarity regarding *roles and responsibilities*, as it ensured that everyone knew what to expect from their counterparts. Participants expressed difficulties when they felt their counterparts did not fulfill their roles, leaving them with the fallout. The crisis did not lead to new arrangements in responsibilities among the actors, due to the Swedish responsibility principle (*ansvarsprincipen*), which states that areas of responsibility should not change during crises. However, some participants described a lack of pre-defined roles in certain circumstances that became more apparent during the crisis, which in turn led to increased difficulties in coordination as participants could not rely on their counterparts.

“… you think that the other person is responsible for it. It's this division of responsibility… In reality, it's more like dumping people as soon as possible.” – IP2

Participants also highlighted *routines and guidelines* as crucial to the foundation of medical care coordination in eldercare, facilitating interaction and ensuring that both parties knew what to expect from each other. A lack of well-defined routines or guidelines created confusion about what to do and what protocols to follow. Although routines and guidelines were viewed as important during non-crisis periods, participants often found them challenging and hard to comply with in the context of the high uncertainty brought by the crisis. The dynamic nature of the crisis led to frequent changes in routines and guidelines within a short time span. Furthermore, the introduction of numerous new routines or guidelines had the consequence of fostering a top-down management approach. This approach restricted the staff´s ability to think creatively and take proactive control over their tasks.

"It was kind of no idea to read the sampling procedures on Friday if you were going to be free on the weekend because on Monday they would be new again. So that's how it felt for a while… you had to be creative and then maybe it was not according to routine all the time but you tried to get the business to flow." – IP5

Participants also viewed *communication* as vital in order for medical expertise to be transferred between organizations. When communication faltered, it put barriers on the coordination efforts. As the crisis unfolded however, lines of communication were perceived to have improved according to both physicians and nurses. Communication was improved by both enhancing already established channels, such as increasing telephone availability, and introducing new methods of communication through digital solutions. Some healthcare centers for instance arranged a specific contact person for municipal eldercare staff to call when they needed assistance outside of their scheduled appointments.

"… [we now] have a contact person at the healthcare center… they can also call there and talk to the person who can take it to the physician and so you can get faster contact with the physician." – IP17

Intra-organizational Factors

Factors within each individual organization exerted a significant influence on the coordination between physicians and nurses during crises. Factors included the overall attitudes within each organization, the resources allocated, and the management.

Attitudes towards coordination

Participants highlighted personal *engagement to medical care* as important, stating that it could motivate participants to exert extra efforts individually. Moreover, when one party was not fully engaged in their work-related tasks, it led to mistrust and worse medical care coordination. Physicians were frequently identified by the nurses as lacking engagement, which they attributed to the fact that physicians were only contracted in the nursing homes to provide limited medical services and were only present on an irregular basis. During the prolonged crisis, personal engagement was seen as vital as it made organizations more resilient to unexpected changes, motivating the participants to work through tough times. Although engagement was identified as important, our study did not indicate that unengaged staff became more engaged due to the crisis.

The degree to which organizations *prioritized coordination* in eldercare was believed to affect the attitudes of staff and thereby the success of coordination. Physicians reported that when the management of their organization did not prioritize medical care coordination with the nursing homes, there was little time and opportunity to engage in this type of activity. Medical care coordination with eldercare is only one of many assignments that the regional physicians are responsible for, making it difficult to prioritize. When the crisis emerged, the demand for medical care by physicians in nursing homes increased, exerting pressure on the regional managers at healthcare centers to prioritize medical care coordination to a higher degree.

Available resources

The availability of intra-organizational resources affected the extent to which staff could engage in medical care coordination in the eldercare setting. The *staffing levels* within one organization were seen as pivotal for medical care coordination, and low levels of staffing or weak continuity among the physicians or nurses were identified as a barrier to coordination. Participants stated that low staffing levels impaired the development of relationships during coordination, creating a lack of compatibility and decreasing participants willingness to ask their counterparts for help. Higher staffing levels meant that there was room in the system for unplanned events. During the crisis, the absence of staff members led to a disruption in staff continuity. As a result, it became more challenging to coordinate between the involved organizations. One of the participants highlights continuity as an important aspect for coordination.

”We've had this physician for a while now, so we know each other well and how to work together, so maybe that has something to do with the stability of working together…” – IP1

Participants found that possessing *internal knowledge* about medical care coordination, including coordination procedures and patient-specific information, played a crucial role in enabling them to effectively collaborate with their counterparts. Participants acknowledged the significance of harnessing the existing knowledge within their respective organizations to enhance their ability to coordinate effectively with the other organization. This was partially accomplished by implementing clear instructions, streamlining procedures, and developing comprehensive coordination guidelines that were also comprehensible to the counterpart actors.

Throughout the crisis, which resulted in a significant increase in staff absenteeism, the lack of internal knowledge pertaining to coordination procedures – including information transfer and appropriate communication channels – along with limited familiarity with patients and their medical histories, resulted in staff members overlooking vital patient information

”So, I think you can lose a lot of information if there is a turnover of both physician and nurses. It's like starting over when a new nurse starts.” – IP11

Participants described their *workload* as an important barrier affecting how well they could coordinate with their counterparts. Physicians in particular stated that high workloads could create confusion as

how to prioritize, leading to medical care coordination not receiving the time needed to efficiently function. During the crisis, greater workload was a recurring theme and could create a sense of time scarcity, which in turn could culminate in stress.

Management and organization

A further factor affecting medical care coordination in eldercare could be linked to how the management within each organization worked. A *bottom-up* approach to management was seen as an important facilitator to coordination as it created an environment of flexibility and adaptability. During the crisis, innovation within the organizations were primarily found to be driven by the staff working closely with patients, highlighting the significance of a bottom-up approach that facilitated quicker decision-making. Furthermore, innovative ways of coordinating during the crisis came from the staff working closely together 'at the bottom', reducing the need for a top-down management approach.

"... you got rid of the fixed boundaries the decisions that take too long ... now it's this patient, how should you think?" – IP14

Moreover, according to the participants, *leadership* was viewed as central in providing direction to the staff concerning the established procedures and guidelines regarding coordination. Managers acknowledged their involvement in clinical setting as limited, owning to the staff´s expertise in the area. Although a bottom-up approach to management was important during crisis, lack of leadership during crisis could result in less accountability, which in turn impaired medical care coordination. During the crisis, inadequate leadership caused confusion among staff who struggled to comply with the varying routines and guidelines from different sources. This, however, did not entail that leadership had to assume a hands-on approach in every scenario. Rather, in times of crisis, their principal function predominantly revolved around furnishing support to the staff.

Discussion

The aim of this study was to investigate the impact of the Covid-19 pandemic on eldercare coordination, and to examine the facilitators and barriers that contribute to coordination during a prolonged crisis, such as the pandemic.

As the pandemic unfolded in Sweden, both the media and subsequently the Covid-19 Commission portrayed coordination in eldercare as faltering, highlighting deficiencies in performance.[17,18] However, the findings of this study indicate that medical care coordination in nursing home care was conceived to have function relatively well, according to the providers themselves. Quite surprisingly, the pandemic was not perceived by the professionals to have led to a deterioration of medical care coordination in the aftermath of the pandemic, but rather a slight improvement in some aspects. The survey data suggested that both the clarity of documents and agreements, as well as the transfer of information between organizations improved significantly after the crisis.

The analysis of the qualitative interviews, with the framework from Moshtari & Gonçkaves (2017), has the potential to illuminate this somewhat surprising result, indicating that coordination did not seem to have deteriorated (rather the opposite), according to the survey respondents themselves.[11] Participants explained that despite the reduction in staff and services due to illness and virus exposure, organizations largely succeeded in sustaining their collaborative efforts. An explanation for this can be attributed to the inter-organizational element of compatibility, exemplified by a heightened mutual trust among staff members and the existence of shared cultural values between the organizations. Participants described that a higher level of trust amongst the staff during the pandemic mitigated the stressful situation and ensured that staff could ask each other for assistance outside the regular allocated hours. The presence of shared cultural values was also significant, as it meant that organizations felt like they were a joint group, which strengthened them during the hardships and created the feeling of working towards the same goal.

Although compatibility between organizations was perceived as important, some participants stated that they still lacked both trust and cultural values with their counter-organizations. This did not necessarily mean that the medical care coordination did not function, but rather that other intra-organizational factors such as personal engagement became more important. Engaged staff did, among other things, exert pressure on their managers to prioritize medical care coordination to a greater extent, which furthermore increased the time allocated for medical care coordination each week.

Our results seem to align well with Aldrich (2019) who suggests that urgency in a major crisis can de facto *improve* coordination.[10] In such situations, actors often feel compelled to coordinate in order to effectively solve the difficult issues at hand.[10] This might have been the case during Covid-19 where staff introduced new, innovative communication channels to enhance coordination. The adversity of the situation also appeared to foster a mutual understanding and a necessity to place trust in one another. However, the pandemic also caused intensified interdependence among coordinating actors, underscoring how the failure of one actor to fulfill their responsibilities could undermine coordination, amplify power discrepancy and fuel frustration, particularly on the part of the municipal nurses.

An alternative explanation, not raised by the crisis-oriented theories, could be attributed to disparate expectations and understanding among the participants compared to other groups in society of what constitutes good and effective coordination in eldercare. Healthcare professionals frequently adhere to specified standards, values and beliefs within their specialized cultures, while other groups in society have different views of what constitutes good healthcare.[36,37] For example, both physicians and nurses within nursing homes might possess a deeper understanding of the challenges in caring for seriously ill older adults, thus fostering a more favorable view of the coordination process then outsiders. One of the respondents validated this perspective by stating that the pandemic raised societal awareness about the shortcomings of coordination within eldercare, while the staff thought they were doing what they should and could to ensure high quality care. This shift in perception might explain why staff could discern improvements within their coordination efforts while the public did not.

Furthermore, the positive perception among the professionals towards the medical care coordination, may also be attributed to an increased sense of empowerment among the working staff during the pandemic. This could be explained by the responsibility principle in Sweden, stating that responsibilities do not shift during a crisis. The responsibility principle implies the absence of a central crisis organization dedicated to handling the pandemic and furthermore grants the management the overarching responsibility. Our findings suggest that the healthcare and social care managements responded to this responsibility, by granting autonomy to the professionals themselves to manage the crisis. This is consistent with other results from the Swedish healthcare sector during Covid-19, indicating that collegiality and peer learning prevailed over reliance on routines and regulations.[38] Granting autonomy to the professionals themselves could foster a more favorable depiction of the coordination during the crisis.

Thus, the conclusions drawn from this study may primarily be applicable to crises related to pandemics or other diseases. Furthermore, the study's scope is confined to inter-organizational coordination, within healthcare, with already established coordination and where coordination mechanisms are already in place. We contend that the Swedish eldercare serve as a challenging case for achieving successful coordination, given the inter-organizational divide between municipal social care and regional healthcare. Furthermore, we conclude that the study's generalizability extends to contexts in which responsibilities of healthcare and social care are divided, such as in the Swedish eldercare.

This study makes a theoretical contribution by integrating crisis management literature with inter-organizational coordination in healthcare. Firstly, crisis management theory was employed to explain the impact of Covid-19 on inter-organizational coordination. Secondly, a framework capturing facilitators and barriers to inter-organizational coordination during crisis was adapted to a healthcare setting. Although the framework identifies various of factors that influence coordination outcomes, it does not establish a causal link explaining their impact on coordination. Future research should put emphasize identifying the factors that is particularly pivotal for coordination outcome during crises.

Conclusion

The findings of this study indicate that professionals working in nursing homes perceived medical care coordination to function well during the Covid-19 crisis. This is a surprising result given the massive public critique toward the management of Covid-19 in eldercare. The discrepancy is attributed to different expectations; the professionals adhere to specialized standards within healthcare and can foster different values and beliefs within their specialized culture. Furthermore, their experience in the field gave them a more nuanced perception of what they believe constitutes good medical care coordination. The conclusion of the study also underscores the importance of trust and shared values among the professionals working within organizations that coordinate during crisis. Despite the challenges brought on by the crisis, a familiarity with the counter-organization mitigated uncertainties during stressful periods.

Theoretical contributions include integrating crisis management literature with inter-organizational coordination in healthcare. The approach provides new insights to clarify the impact of crisis on medical care coordination, as well as provides the facilitators and barriers that are important for coordination during a crisis.

Limitations

It is important to acknowledge the limitations of this study. Firstly, the response rate of the survey was low, introducing a risk of bias influencing the results. One could also argue that the unexpected positive views on coordination might be attributed to a bias, assuming that participants with a more optimistic perspective were keener to participate in the survey compared to those with a more pessimistic view. However, we consider this scenario unlikely, as there is no logical reasoning to support the idea that more optimistic individuals would be more prone to participate in the survey. Considering that the participants were assured anonymity, the survey could rather be an opportunity to anonymously air grievances about the management of the pandemic. Instead, we believe that the low response rate stemmed from time constraints and an overload of surveys directed at this specific sampling group after the Covid-19 crisis. This view was confirmed when conducting the interview study, where some of the respondents that initially expressed willingness to participate stated that they no longer wanted to participate due to time constraints. Additionally, incorrect email addresses, for instance due to the absence of relevant contact lists and staff information from the regions and municipalities led to some individuals receiving the survey who were not intended to be included in the sample, thus potentially increasing the apparent response rate. This in connection to high staff turnover probably led to a low response rate.

A second limitation concerning the participants relates to the reliability of their responses regarding how the coordination has shifted before, during, and after the pandemic. Assessing the “before” phase may have been challenging due to its remote timeframe but since we lack insight into their perceptions before the pandemic, it became necessary to ask them after the pandemic had mostly subsided. Despite this challenge, we argue that the impact of the pandemic was so significant that it is likely to have left an impression strong enough for participants to recall the changes it brought.

Finally, there is a limitation that the selected framework was developed to describe coordination during crises among humanitarian organizations, rather than healthcare organizations that have coordinated efforts over an extended period of time. Nonetheless, we found this framework the most suitable to use for the purpose of this study in assessing facilitators and barriers. By adopting the framework to our particular context, we found it useful in providing a comprehensive overview of diverse factors influencing coordination. However, there is a potential risk that we might overlook factors associated with coordination in the healthcare field.

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Figures

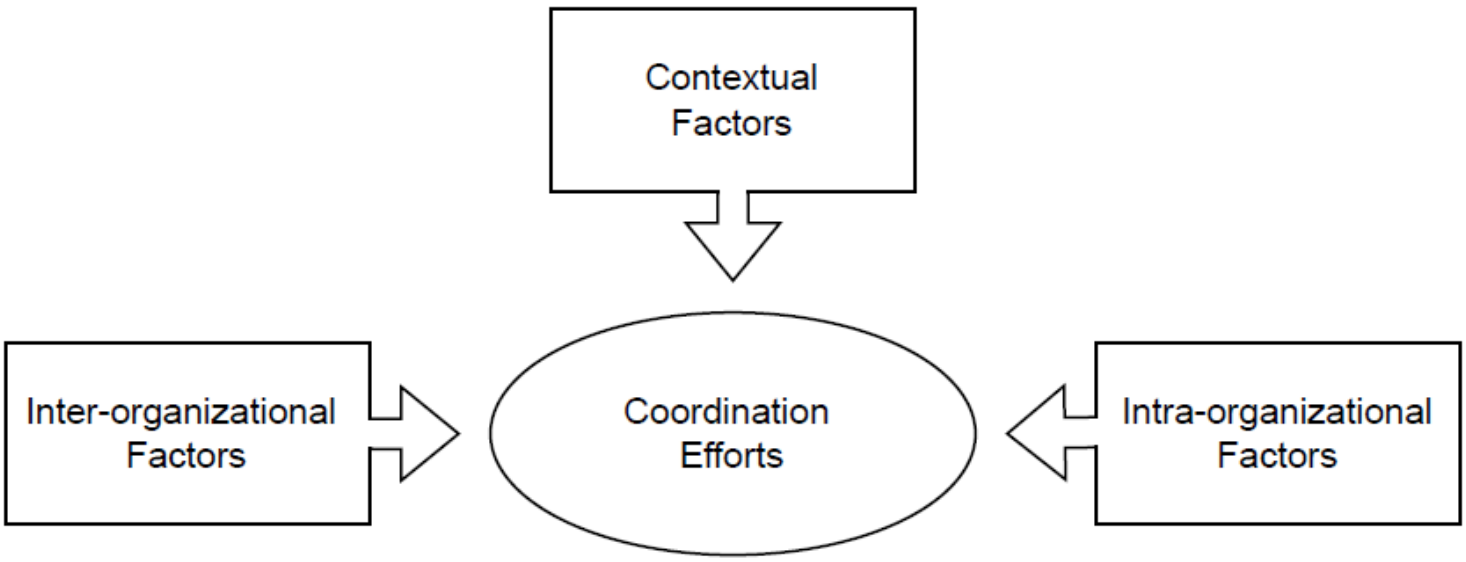

Figure 1

Presents factors thatinfluence coordination in the conceptual framework.

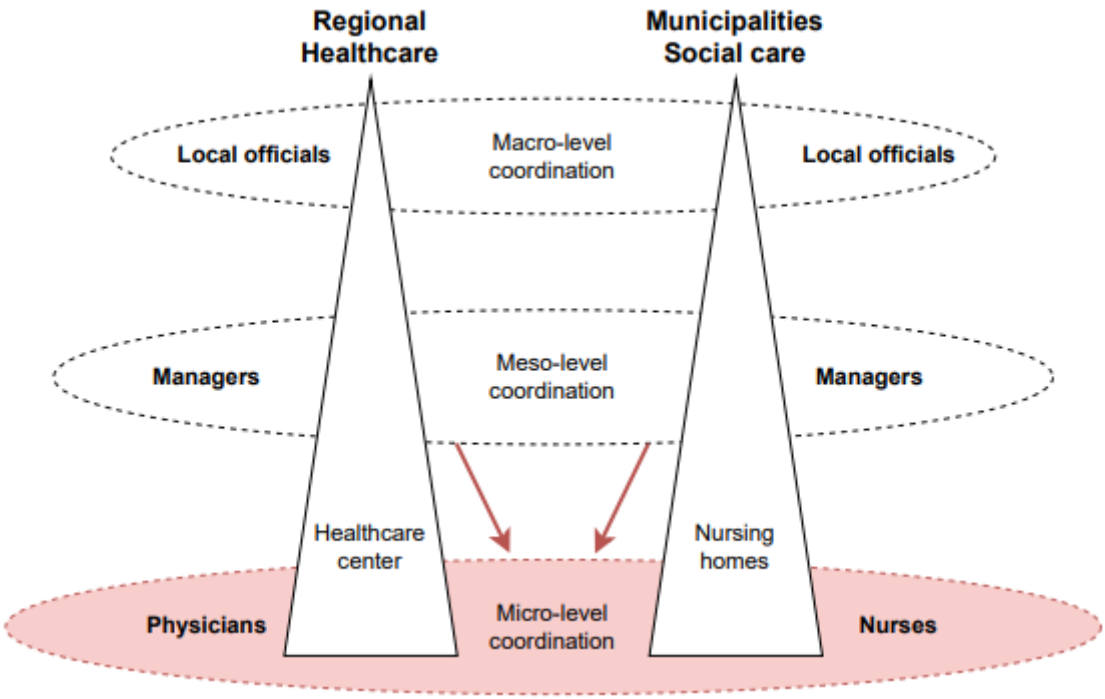

Figure 2

illustrates medical care coordination in the different tiers of regions and municipalities.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Appendix1.docx
- Appendix2.docx
- Appendix3.docx