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ORIGINAL RESEARCH

Infectious Disease

Effect of COVID-19 on health system integration in the Netherlands: a mixed-methods study

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Abstract

Objectives: Overcrowding in acute care services gives rise to major problems, such as reduced accessibility and delay in treatment. In order to be able to continue providing high-quality health care, it is important that organizations are well integrated at all organizational levels. The objective of this study was to to gain an understanding in which extent cooperation within an urban acute care network in the Netherlands (The Hague) improved because of the COVID-19 crisis.

Methods: Exploratory mixed-methods questionnaire and qualitative interview study. Semistructured interviews with stakeholders in the acute care network at micro (n = 10), meso (n = 9), and macro (n = 3) levels of organization. Thematic analysis took place along the lines of the 6 dimensions of the Rainbow Model of Integrated Care.

Results: In this study we identified themes that may act as barriers or facilitators to cooperation: communication, interaction, trust, leadership, interests, distribution of care, and funding. During the crisis many facilitators were identified at clinical, professional, and system level such as clear agreements about work processes, trust in each other's work, and different stakeholders growing closer together. However, at an organizational and communicative level there were many barriers such as interference in each other's work and a lack of clear policies.

Conclusion: The driving force behind all changes in integration of acute care organizations in an urban context during the COVID-19 crisis seemed to be a great sense of urgency to cooperate in the shared interest of providing the best patient care. We recommend shifting the postcrisis focus from overcoming the crisis to overcoming cooperative challenges.

KEYWORDS
acute care network, cooperation, COVID-19, emergency care, integrated care, overcrowding

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1 | INTRODUCTION

1.1 | Background

The overcrowding of acute care services gives rise to major problems in health care because of many factors.[1–3] One factor is the growing influx of patients combined with a lack of health care personnel causes reduced accessibility and delays in treatment, often resulting in suboptimal quality of care, an increased workload for health care professionals, and a higher complication rate.[1,2,4] Another factor is the large number of health care organizations leads to fragmentation. A study found that fragmentation was associated with increased costs of care, a lower chance of being subjected to clinical best practice care, and higher rates of preventable (re-)hospitalizations.[5] The coronavirus disease 2019 (COVID-19) pandemic poses a threat to already overstretched acute care services worldwide. Organizations have been forced to cooperate and restructure quickly, to deal with the growing number of patients with threatening medical conditions, the lack of personal protective equipment (PPE), and staff loss due to disease.[6,7]

Across the Netherlands, the acute care network involves many different organizations, including emergency departments, general practice cooperatives (GPCs), ambulance services, acute mental health services, and home care and nursing home organizations. Dutch citizens are required to have a basic health insurance package to guarantee the quality of care, leading to insurance companies having substantial influence on the network's organization and function.[8] Because of the large number of organizations involved, there are multiple entrance and exit routes for patients in the acute care network. The general practitioner (GP) acts as a gatekeeper at the primary care level, deciding whether to refer a patient to secondary health care, resulting in lower health care costs for the society as a whole.[9] With a referral from their GP, patients are able to use secondary health care and are eligible for reimbursement.[10] Patients with medical problems typically visit their own GP during office hours, even when problems are perceived as urgent or threatening.[11] After-hours patients with an acute care request can report to a GPC. When a request is considered urgent, they can self-refer directly to the ED at all hours or be transported to the ED by ambulance following a GP visit or as a result of calling the national emergency telephone number 112.[12] After receiving assistance at an ED, a patient can be hospitalized, referred to a nursing home, receive care at home if necessary, or be referred back home.[13] These multiple entrance and exit routes increase the pressure on the acute care network.[14,15] In the region of The Hague, the third largest city in the Netherlands with a population of around 800,000 people, the large number of health care providers involved additionally increases the challenges of effective cooperation by fragmentation caused by health care providers working independently and with too little communication.[15,16] Two general hospitals coexist in the city, both with a GPC in close proximity to their ED. A large GP partnership coordinates the 2 GPCs. [17,18] Among the multitude of home care and nursing home organizations in the area, 5 organizations are the largest players, including many elderly care physicians and nurses. Two insurance companies have substantial market share in urban The Hague.

The Bottom Line

In this mixed-methods study, the impact of COVID-19 on integration and cooperation across different levels of health care delivery are explored; results indicate that although the COVID-19 crisis increased cooperation across clinical and professional levels, systemic barriers at the organizational level inhibited change.

1.2 | Importance

Cooperation and integration are presumed to be the key to successfully overcoming the practical, organizational, and medical challenges we have outlined here.[19] Effective communication and coordination between all stakeholders at different levels of an organizational structure are crucial to providing high-quality health care.[20,21] The Rainbow Model of Integrated Care (RMIC) by Valentijn et al. was developed as a conceptual framework to visualize integrated care from 6 interrelated dimensions: clinical, professional, organizational, systems, functional, and normative integration.[20] These dimensions of integration play complementary roles on the micro (clinical integration), meso (professional- and organizational integration), and macro levels (system integration). To achieve connectivity and to add overall value, functional and normative integration should ensure the linking of the micro, meso, and macro levels with the system. Functional integration includes planning, human resource, information, and financial management. Normative integration includes a shared mission, vision, and culture between different individuals, organizations, and regulatory bodies (Figure 1).[20] The dimension of normative integration can be further explored by using the ''5 lenses on cooperation'' model by J. Bell et al.[22] This model offers a comprehensive view of methods used to manage cooperation successfully, based on the premise that the best cooperation requires an integral approach with 5 balanced building blocks: shared ambition, mutual gains, relationship dynamics, organization dynamics, and process management.

1.3 | Goals of this investigation

The COVID-19 crisis confronted the acute care network with a challenge requiring fragmentation to be set aside. The aim of this exploratory mixed-methods study was to gain an understanding of the extent to which cooperation of stakeholders in our urban acute care network improved because of the COVID-19 crisis by answering 3 questions: (1) What changes in cooperation took place? (2) What were the facilitators and barriers for cooperation? And (3) Which changes in

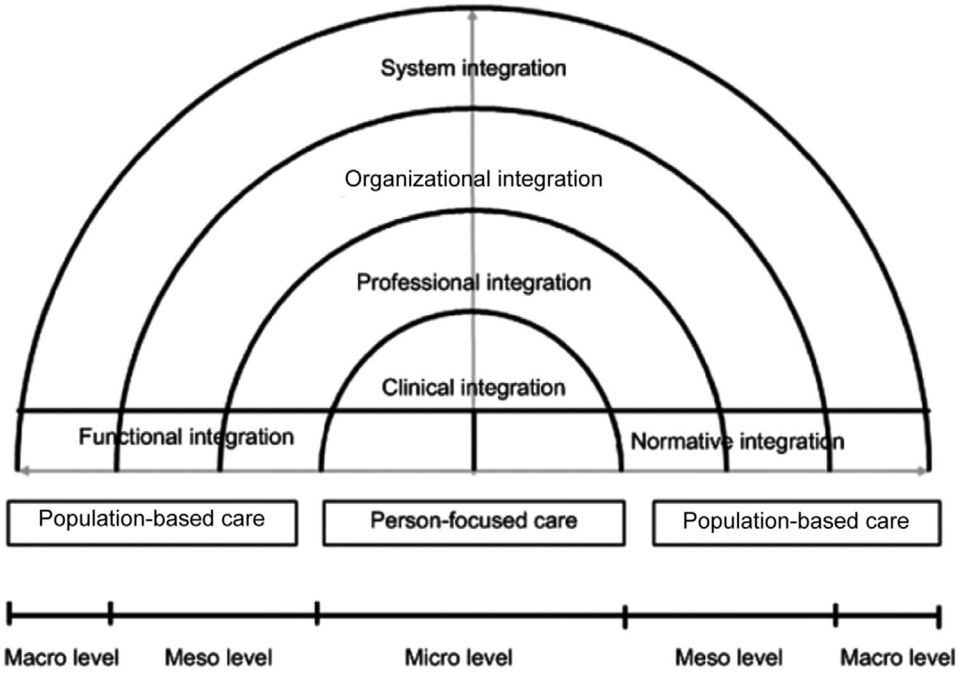

FIGURE 1 Rainbow model for integrated care (RMIC) (no copyright restrictions)

cooperation are desirable in the future in order to improve the accessibility of acute health care?

2 | METHODS

2.1 | Study design and selection of participants

We performed an exploratory mixed-methods study using questionnaires and semistructured interviews to gain an overview of perspectives from stakeholders in our acute care network. The stakeholders were recruited using a snowball sampling strategy.[23] The first 4 important, visible stakeholders were selected by the research team (a GP, a manager of the GP partnership, and a specialist from hospitals 1 and 2 and asked to name other important cooperation partners. This procedure went on until no new names were mentioned. The final research group consisted of 22 stakeholders: 10 clinicians, 4 managers, 5 administrators, and 3 insurance company representatives (Table 1). We added 2 additional parties: the Dutch Red Cross and the regional medical relief organization (in Dutch, GHOR), which coordinates the regional acute care network during crises. Both were asked only about their experiences as an external party and, therefore, are not counted as stakeholders.

2.2 | Questionnaire

The addition of a questionnaire to the qualitative study is done to support the qualitative analysis. Approximately 1 week before their interview, the 22 stakeholders received a digital questionnaire based on topics of the validated RMIC Measurement Tool [24] (see Appendix S1) to provide a baseline overview of which changes in integration took place during the COVID-19 crisis, secondary to the qualitative research. The questionnaire consisted of 23 questions, with answer choices corresponding to different stages of integration: completely segregated (score 1), aligned (2), coordinated (3), and completely integrated (4). Each question was asked 3 times, in the context of to 3 different situations: the situation *before* the COVID-19 crisis, the situation *during* the COVID-19 crisis, and the *preferred* situation. The questionnaire data were generated using a Likert scale method and reported as mean, median, and 95% confidence interval scores of the median, calculated per RMIC dimension, for each of the 3 different situations. The explanations provided in the questionnaire were also used as a basis for further discussion during the interviews. Statistical analysis was performed with SPSS-version 21.0 (2012, IBM Corp., Armonk, NY, USA).

2.3 | Interviews

Nineteen semistructured interviews were conducted using a topic list to standardize interviews between July and September 2020 with a total of 22 stakeholders (16 individual stakeholders, 6 in pairs) by RNM, supported by researcher MCB. Before the first interview, both researchers were trained by the entire research team. After informed consent was given, audio recordings ranging from 35 to 85 minutes were made. The topic list distilled from the 5 lenses on cooperation model [22] and chosen following consultation with a change management expert consisted of 2 general topics, followed by 9 connected key topics of cooperation: shared vision and ambition, shared interests, trust, affective relations, informal culture, leadership roles,

TABLE 1 Stakeholders involved in the acute care network in The Hague

Level	Group	Abbreviation	N = 22
Micro: clinical integration			
	General practitioner	GP	1
	Specialist hospital 1	SpH1	2
	Specialist hospital 2	SpH2	3
	Residents (specialist registrar) H1 and H2	ResH1/ResH2	2
	Elderly care physicians	ECP	1
	Nurse practitioner	NP	1
Meso: professional integration			
	Manager GP partnership	ManGP	1
	Manager ambulance services	ManAS	1
	Manager home care and nursing home (organization 1)	ManNH	1
	Manager emergency mental health services	ManMHS	1
Meso: organizational integration			
	Administrator GP Partnership	AdmGP	1
	Administrator home care and nursing home: (Organization 1 and 2)	AdmNH1/AdmNH2	2
	Administrator hospital 1	AdmH1	1
	Administrator hospital 2	AdmH2	1
Macro: system integration			
	Insurers: organization 1 and 2	Ins1/Ins2	3

accountability, and feedback, transparency, and friction (Appendix S2). Stakeholders were additionally asked about their dreams for the future concerning cooperation in the acute care network. The interviews were transcribed verbatim by MCB following participant consent. RNM then organized a feedback event on September 16, 2020 at which all participants were able to share preliminary results of the study. The transcribed interviews were coded and labeled by MCB, discussed by HMMV, and analyzed using the Atlas.ti (version 7) software program for qualitative data analysis. All codes were regrouped into subgroups based on the interview topic list and rearranged into 6 themes (Table 2), per integration level of the RMIC, using a deductive approach. Some new themes were developed: distribution of care and funding. For each of the themes we determined whether it acted as a barrier or a facilitator at each level of integration of the RMIC. The experiences of 2 external parties were also added to the data set, but no full interview was conducted. The questionnaires and interviews were pseudonymized. The study was registered and approved by the medical research ethics committee of Leiden University Medical Centre (LUMC).

TABLE 2 Rearrangement of themes for analysis

Interview topics	Themes
Shared vision and ambition	Perspectives on the future
Shared interests	Interests
Trust, transparency, friction	Trust
Affective relations	Interaction
Informal culture, accountability, and feedback	Communication
Leadership roles	Leadership
New	Distribution of care
New	Funding

3 | RESULTS

3.1 | Questionnaire

Following exclusion of 5 questionnaires not completed within the allotted time before the interview and 3 questionnaires from the insurers who were not able to answer the questions about clinical practice because of a lack of insight into the entire network, we included 14 questionnaires in our study to provide a baseline overview. Table 3 shows the results of our statistical analysis on the exploratory questionnaire data. The mean during-COVID scores were higher than the pre-COVID scores in 5 of the 6 integration levels, though none of the differences were statistically significant. Along all 6 integration levels, both pre- and during-COVID integration scores were lower than the scores describing the preferred situation.

3.2 | Interviews

All interview results are substantiated with quotes of the stakeholders, are found in Supplement I, and indicated in the following text by Q1 through Q56. Some quotes also are shown in the result section.

Research question 1: What changes in cooperation took place during the crisis?

The driving force behind all changes in cooperation seemed to be a great sense of urgency during the crisis and therefore there was a need for increased contact and clear policies (Q1). The managers of the GP partnership decided to concentrate all COVID primary care in one GPC located at hospital 1, thereby sending all non-COVID primary care to the GPC at hospital 2. Having all COVID-related primary care concentrated in 1 location also facilitated cooperation with the ED (Q2). Hospital 1 formed a team of pulmonology and internal medicine specialists and residents who took turns with shifts at the GPC, bringing specialized care into the COVID GPC. This type of integrated care in which GPs treating patients in primary care can consult specialists for advice is called Primary Care Plus (PC+). [25] PC+ was already implemented in daily primary care but received a large boost in the acute setting at the COVID GPC, which helped reduce overcrowding in the ED by keeping patients in primary care. An unexpected benefit was the

TABLE 3 Questionnaire results

Level of integration	Before COVID (n = 14)	During COVID (n = 14)	Preferred situation (n = 14)
Clinical integration; mean (±SD)	2.1 (0.28)	2.4 (0.30)	3.6 (0.32)
Median	2.20	2.60	3.80
95% CI lower-upper bound	1.9-2.3	2.2-2.7	3.4-3.9
Professional integration; mean (±SD)	1.9 (0.79)	2.4 (0.78)	3.8 (0.21)
Median	1.75	2.25	3.75
95% CI lower-upper bound	1.3-2.5	1.8-3.0	3.6-4.0
Organizational integration; mean (±SD)	1.8 (0.37)	2.1 (0.44)	3.6 (0.30)
Median	1.75	2.00	3.60
95% CI lower-upper bound	1.5-2.1	1.8-2.4	3.4-3.8
System integration; mean (±SD)	1.9 (0.33)	2.1 (0.42)	3.4 (0.34)
Median	2.00	2.00	3.33
95% CI Lower-upper bound	1.7-2.2	1.7-2.4	3.2-3.7
Functional integration; mean (±SD	1.3 (0.37)	1.4 (0.49)	3.9 (0.17)
Median	1.00	1.00	4.00
95% CI lower-upper bound	1.0-1.6	1.0-1.8	3.8-4.1
Normative integration; mean (±SD)	2.1 (0.47)	2.6 (0.46)	3.9 (0.24)
Median	2.33	2.67	4.00
95% CI lower-upper bound	1.7-2.5	2.2-2.9	3.7-4.0

The scores corresponded with different stages of integration where one means completely segregated, two aligned, three coordinated, and four completely integrated.
Abbreviation: CI, confidence interval.

opportunity for various doctors to observe each other's work, leading to a growing appreciation and trust (Q3). Another helpful intervention was the placement of an elderly care physician at the ED to facilitate outflow (Q4). Furthermore, the system that gives insight into the available capacity at nursing home organizations, called "POINT," was improved to facilitated patient outflow from hospital to nursing homes. Another improvement concerning technology was that GPs at the COVID GPC were given access to the patients' GP records to improve efficiency. Improvements also were made at the professional level. Very early on, a regional crisis team was formed, including specialists from both hospitals, GPs, and managers from the GP partnership. This could be set up very quickly as these working partnerships already existed. Furthermore, the GP partnership played an important role in bringing both hospitals together as they wanted to make joint agreements. Previously, this was often done separately per hospital (Q5). In the organizational dimension, administrators and policy makers used the existing regional counsel for the acute care network, called the "ROAZ" (regional organization of acute care), as a platform for discussion and decision-making. At a national level, these ROAZs were encouraged to take responsibility for the region. As such, the ROAZ also rapidly formed a crisis team, which consisted of administrators with a certain mandate for making quick decisions (Q6).

Q6: "You know, they acted, they set up a crisis team, they made decisions (and maybe they weren't always the best decisions, in retrospect), but they were able to face the crisis in this region. … They really took some good steps." Insurer 2 (Ins2)

Research question 2: What were the facilitators and barriers for cooperation during the crisis?

In the clinical dimension, clear agreement about work processes and a fixed coordination team who were facilitating contact between all employees of the COVID GPC really facilitated cooperation (Q7). Normally, the medical assistants, nurse practitioners (NPs), and GPs start their shifts at the GPC at various times, resulting in very little contact, a lack of clarity about the assignment of roles, no structural moments for feedback, and communication difficulty (Q8-Q9). Because of fragmentation of home care and nursing home organizations, and therefore no central point of contact, outflow continued to be a barrier in several ways (Q10). Finally, the lack of accessibility to a joint electronic health record (EHR) was noted as a significant barrier to cooperation (Q11). The PC+ facilitated an understanding of each other's challenges and as a result growth of personal relationships and trust. There was a general willingness to take on other tasks and responsibilities, and most clinicians said that they felt appreciated by their colleagues, both within and across organizations. A mismatch between the managerial levels and the clinical level was mentioned repeatedly. Some felt that managers meddled too much in the workflow and made unnecessary adjustments (Q12). The distribution of care was especially relevant for patient tasks that could be done equally well by different groups of

clinicians, so clear agreements were made. Stakeholders speculated about the role financial interests could have played for both parties in different ways because of the difference in payments for fee-for-service (FFS) versus a fixed monthly capitated payment. However, many clinicians emphasized that the most important incentive for any clinician is simply to provide the best patient care possible (Q13).

Q8: "So, what the GP did was call the medical assistant instead of the GP colleague and leave the problem with her. Well, that means nothing is going to change of course. You have to address your colleague personally, but that is quite difficult. … Look, at your own daytime practice you really know your colleagues well and I can tell them everything. But at the GPC, with a random other GP? That doesn't happen." GP

In the professional dimension, the regional crisis team consisting of professionals and managers from different organizations met regularly. It was very easy to share feedback at the professional level. For example, specialists felt that GPs in general were too quick to send COVID patients to the hospital. The regional crisis team was a good place for discussing these issues. Another improvement was the creation of shared protocols between professionals. For example, the pulmonologists from both hospitals got together to create a shared protocol for treating COVID patients with pulmonological comorbidities (Q14-Q15). The regional crisis team felt that they were better able to make quick decisions than the administrative level, because organizational interests did not seem as relevant at the professional level. Professionals and managers also felt that their sense of urgency was stronger than that of administrators, as they were closer to the workplace (Q16-Q17).

Q16: "I think it's important that you don't only tackle these kinds of crises at the administrative level, but also, especially, at a doctor-level. […] You know, the one standing hands-on at the ED, seeing the ICU filling up, seeing colleagues with no PPE …. Because if you leave that for the administrative level, then there will always be organizational interests that play a role. … And that's just not right in a situation like this." Manager, GP partnership (ManGP)

In the organizational dimension, some challenges concerning communication arose owing to ambiguity about criteria for defining a patient as COVID suspect, causing unclear situations where one party arrived with protective clothing while the other party was not wearing any. Another example was the quick decision to set up the COVID GPC at hospital 1 rather than hospital 2. Much of the COVID care went to hospital 1 via the GPC, despite the fact that hospital 2 also set up a COVID ward and was prepared to receive COVID patients through their ED (Q18-Q19). Furthermore, the fragmentation of organizations contributes greatly to difficulty in communication. The multitude of home care and nursing home organizations caused patient outflow to be quite an issue in the acute care network, because the variation between their policies and the communication toward the hospitals was not clear (Q20-Q23). The GP partnership tried to convince the nursing home organizations to create a centralized COVID ward, saving personnel, PPE, and space. However, the nursing home organizations decided to divide their COVID patients between 3 of the organizations owing to limited space and competition, and they reported not having appreciated the interference in their process (Q24-Q25). Such unresolved issues led to mistrust and negative assumptions about the motivations of other organizations. On the other hand, the frequent contact between administrators of various organizations at the ROAZ during the COVID-19 crisis improved trust (Q26). Trust also grew by seeing other organizations putting in their best efforts. In general, stakeholders agreed that "trust takes years to build, seconds to break, and forever to repair." As a solution for improving trust, a clean, competition-free foundation might be necessary (Q27). The government had encouraged the ROAZs to take responsibility in handling the crisis. As such, a regional council, previously with little mandate, became the platform upon which many decisions were made (Q28). As a barrier for cooperation within the ROAZ, administrators of nursing home organizations said that they felt misunderstood and misrepresented at times (Q29), but the crisis facilitated a faster inclusion of these organizations (Q30). The fact that interests were subordinated to the mutual gain of overcoming the crisis was perhaps one of the greatest facilitators for cooperation, because interests are usually seen as a large barrier in cooperation (Q31). During the crisis, stakeholders were reminded of their common interest, namely optimizing care for the patient (Q32-Q33). However, the funding system and the resulting competition between providers complicates cooperation (Q34). At the same time, several stakeholders also expressed that competition is unnecessary because there is already an excess of patients needing acute care (Q35). Decisions were also made to centralize other acute care within the hospitals in order to even out the burden of patients needing intensive care and with it the sharing of personnel (Q36-Q37).

Q32: "At the end of the day, there is only one interest and that is that we provide the best patient care. And that is what brings you together, that is what you share with the other parties, that must always be the starting point." Administrator, GP partnership In the system dimension, the national association for insurers sent a "comfort letter" to the organizations in which they explained they would fairly compensate fairly any extra expenses due to the crisis (Q38). However, in response to the growing costs of arrangement of COVID care hotels, insurers made the regional ROAZs responsible for financial approval of these plans (Q39). Insurers felt that the crisis brought the insurers as a group closer to the rest of the acute care network (Q40). The issues experienced concerning the fragmentation are not as relevant for the insurance companies as they have the same vision for the future (Q41). However, this practice is not entirely flawless as several stakeholders felt that pilots and initiatives are still often hindered by the fact that certain decisions cannot be made on behalf of the other parties (Q42-Q43).

Q40: "We did become more involved. I don't know if that will be a long-term effect, that remains to be seen. But at that moment we were really closer than we were before." Ins

An overview of the results is given in Table 4.

3.3 | Two external parties

A representative of The Hague Red Cross was positive about the partnership with the acute care network during the crisis. It was very easy to find and make the right contacts, resulting in good communication.

TABLE 4 An overview of facilitators and barriers to cooperation

		Normative integration					Functional integration	
Themes		**Communication**	**Interaction**	**Trust**	**Leadership**	**Interests**	**Distribution of care**	**Funding**
Facilitators (+) and Barriers(-)	Clinical	+ Clear agreements about work processes + Common start of the shift at GPC - No structural moment for feedback at the GPC - Outflow still difficult, no central point of contact - Lack of access to EHR	+ Understanding of each other's challenges, appreciation grew + Positive work environment + Learning curve - Lack of shared trainings and activities	+ Improved due to increased interaction in PC+	+ Freedom to confront supervisors about issues - Mismatch managerial levels and workplace	+ Job satisfaction + Keeping workload low + In the end: best patient care - Own safety - Financial incentive to work at C-GPC	- Pulmonology versus internal medicine: who does COVID care?	- Fee-for-Service versus fixed monthly capitated payment - Unclarity about recompense specialists doing PC+
	Professional	+ Easily accessible + Good place to share feedback	+ Frequent contact + Creation of shared protocols	+ Was present	+ Quick decision-making - More difficulty with administrative level			
	Organizational	- Ambiguity criteria definition COVID-suspect - Set-up C-GPC at H1, one-sided decision - No clear policies and communication towards the hospitals from the various nursing homes - Interference in each other's business (outflow)	+ ROAZ as a good platform for discussions	+ Frequent contact improved trust, transparency in the ROAZ + Seeing best efforts of other organizations - Unresolved issues let to mistrust - Need a competition-free foundation	+ ROAZ as a great facilitator, mandate during the crisis - Nursing homes not included in ROAZ in the beginning	+ Urgency and dependency + Mutual gain of overcoming the crisis+ The patient as most important common interest - Other interests: profiling, safety own employees - Competition	+ Centralize acute care + Sharing of personnel + Excess of patients, no need to compete + COVID-19 crisis opened up a new dialogue	- Funding system causes competition
	System	+ Managerial levels have good contact with insurers + Transition of care improves contact - Settlement post-COVID is complicated	+ Insurers closer to the acute care network than before	+ "Comfort letter" from insurers + ROAZ as eyes for the insurer	+ Two regional market leaders: works well, on good terms with each other	+ Best patient care + Affordable care: cost efficiency		

Abbreviations: GPC, General Practitioner Cooperative; PC+, Primary Care Plus; C-GPC, COVID-GPC; H1, hospital 1; ROAZ, Regional organization of acute care.

A few barriers were mentioned, as such volunteers from the Red Cross helped out at the COVID GPC, but staff at the GPC was not always apprised of the volunteers' tasks and limitations. Furthermore, arrangements with the Red Cross were made separately per organization as no organization played an overarching managerial role. They had expected the GHOR, responsible for coordination of the regional acute care network, to take up this role.

A representative of the GHOR was present at meetings of the ROAZ to oversee the proceedings on behalf of the government as a regional administrator. The representative was encouraged by the distribution of care that took place between the hospitals. A barrier mentioned by nursing home organizations was the lack of professional organization, which complicated their efforts. Another barrier the lack of clear agreements about certain situations, which often resulted in last-minute problem-solving.

Research question 3: Which changes in cooperation are desirable in order to improve the accessibility of acute health care?

Eventual goals for the GPC include a partly fixed group of GPs at the GPCs, clear agreements about task division between GPs, NPs, and medical assistants to facilitate better cooperation. Furthermore, many stakeholders would like to see PC+ continued in the acute care setting beyond the COVID-19 crisis. They added that it would be very helpful to include elderly care physicians and psychiatrists in that structure as well. Taking it a step further, stakeholders dreamed of having a common registration desk, combining and coordinating acute care as much as possible (Q44-Q45). However, where the GP partnership would go as far as combining all services into one acute organization, some organizations thought that would be a step too far (Q46). Stakeholders expressed a desire for better integration of different EHRs. A desire for an investment into more digital solutions such as digital triage and consultations was also mentioned. Several participants mentioned that it would be good to invest in more interprofessional education, to discuss calamities together with all involved organizations, and to continue structural meetings between professionals after the crisis (Q47-Q49). The development of a shared vision across organizations was discussed (Q50). Along with transparency, many stakeholders said that it would be beneficial if there were transparency concerning the available patient-capacity in each organization (Q51). For example, ambulance services knowing the current pressure on each of the EDs in the region in real time would help them allocate their services better. Stakeholders mentioned that the funding system may not always promote the best patient care, as it includes financial incentives (Q52-Q54) and, therefore, health insurers suggested improving this by creating one uniform emergency rate per patient (Q55-Q56).

Q45: "I would really want to see one central, coordinated point for triage and transfer to all beds. … and to go to one call center, where the GP keeps the responsibility, … a place where you can make a connection between the ambulance services, the acute problems coming from the nursing homes, and the emergency telephone number from the mental health services. These all exist already, but bringing them together under one header …, physically, and having one registration desk at the ED where you're simply helped by the person who can help you best…" ManGP

TABLE 5 Stakeholders' dreams for the future

Level	Wishes
Clinical	• Fixed group of general practitioners at GPC • Clear agreements, common start of shift • Continued Primary Care Plus • Integration of all services: common registration point • Digital solutions: electronic health records, consultations
Professional	• More interprofessional education • Discuss calamities across organizations • Set up structural meetings
Organizational	• Formulate shared vision • Make interests clear from the beginning • Transparency in capacity
System	• Change funding • Facilitator role for health insurers

An overview of the results of research question 3 is given in Table 5.

3.4 | Limitations

A limitation of this study is the use of purposeful sampling and snowball expansion of the study participants. Non-probability sampling relies on the subjective judgment of researchers and may be influenced by unmeasurable bias as well as unmeasurable motivations of participants. The loss of 8 out of 22 requested surveys could potentially bias the results as well. There are threats to the validity of the questionnaire because of the low number of responses, the lack of evidence of validity, and the lack of significant differences between the 3 time frames. As such, the questionnaire is intended to provide a baseline overview of the changes seen in integration during the crisis and is therefore secondary to the qualitative results. Another limitation is the fact that we interviewed only 1 or 2 stakeholders per dimension per organization. Finally, as no patients or patient organizations were included in our study, it summarizes the influence of COVID-19 on clinical practitioners only.

4 | DISCUSSION

Our exploratory mixed-methods study shows that better integration is possible when all organizations experience a sense of urgency and dependency. For a good integrated system, improvements on all levels of integration are needed. Previous studies like Suter et al. determined principles of integration, such as the need for a population health focus in which an integrated health care system should be easy for patients to navigate, the importance of integrated EHR, and the need for good financial management that allows pooling of funds across services.[26] Breton et al. concluded that the funding model is "inadequate for centering care around the needs of patients."[27] Lindner et al. observed the

COVID-19 pandemic from a broader, European perspective and came to the conclusion that the pandemic has acted as an accelerator for redesigning and integrating care pathways.[28] Our research adds a new aspect: a shared sense of urgency is essential if better integration is to be achieved.

The COVID-19 crisis may be causing a shift from segregation to integration in our region, except at an organizational level. Many barriers were identified in the organizational dimension, such as the ambiguity in the criteria definition COVID suspect, lack of clear policies and communication between hospitals and the various nursing homes, unresolved issues leading to mistrust, and a misaligning of priorities between the different organizations. There are many opportunities for improvement of these issues. The functional aspects like a shared EHR and adequate funding were lacking and not solved during the pandemic, leading to the question of whether the achieved extra integration for acute services will survive the next phase in the absence of a health crisis. Strengths of this study include our having explored integration at all levels of organization using the RMIC as a framework for evaluating the acute care network as a whole, across > 10 different organizations. The methods and analysis are built upon strong theoretical frameworks concerning cooperation and integration. The mixed-methods approach, in which the questionnaire is used as a visual baseline, further strengthens the qualitative results.

To that end, the driving force behind all changes in integration of acute care organizations in urban context during the COVID-19 crisis seemed to be a great sense of urgency to cooperate in the shared interest of providing the best patient care. We recommend shifting the postcrisis focus from overcoming the crisis to overcoming cooperative challenges and from a research point of view more research concerning integration of the acute care network on a larger-scale with more involved stakeholders and research from a patient perspective. Further, similar research in other areas would be beneficial. As countries have different dynamics and different organizations involved in the acute care network, similar research studies performed in other nations would be useful for generalizing the results of this and similar research.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHORCONTRIBUTIONS

RNM, HMMV, MEN, and MAB contributed to the conception and design of the study. RNM and MCB conducted the interviews and analyses. All the authors contributed to the interpretation of the results. RNM and MCB drafted the first version of the manuscript. All the authors critically revised the manuscript for important intellectual content. All the authors made a significant contribution to the research and the development of the manuscript and approved the final version for publication.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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