#### ORIGINAL RESEARCH

# Exploring Hospital Healthcare Providers' Approaches to Multidisciplinary Initiatives and **Complex Care Collaboration: A Qualitative Study**

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Background: Despite well-documented factors influencing collaboration, healthcare providers' perspectives remain limited. These perspectives are key for understanding how they manage complex patient care effectively. This study explores hospital healthcare providers' views on multidisciplinary collaboration and their openness to an intervention for managing complex care in patients with diabetes and multiple chronic conditions.

Methods: An interview study. The Interpretive Description approach was employed as the research methodology, with Boundary Work as the analytical framework. Purposive sampling was utilised, with data consisting of 22 semi-structured, face-to-face individual and two focus group interviews with nurses, junior physicians, and physicians at Aarhus University Hospital, Denmark.

Results: Three main themes emerged: Wide Support and Need for Multidisciplinary Collaboration; Existing Collaboration Between Clinics - and Their Limitations; and Introducing a Collaborative Initiative: the Intervention. The informants agreed that collaboration and coordination - both broadly and in relation to the specific intervention - are important and could improve care coordination, enhance patients' sense of security, clarify professional roles, enrich expertise, and streamline resource use. However, organisational structures and professional dynamics often hinder such efforts. A key challenge related to the intervention was identifying patients with complex cases for referral.

Conclusion: This study highlights hospital healthcare providers' recognition of the critical need to strengthen collaboration across specialties to manage complex cases effectively. Significant barriers, such as siloed specialisation and heavy workloads, call for targeted political and managerial action. Challenges in identifying complex cases point to the need for methods that adopt a holistic, patient-centred approach to gain a nuanced understanding of the challenges individuals face in living with multiple chronic conditions and receiving care across different hospital clinics. In the future, this approach could streamline the referral of complex cases, with additional research required to explore the potential of flexible multidisciplinary team meetings in enhancing collaboration within complex care pathways.

**Keywords:** patient care team, intersectoral collaboration, multimorbidity, health personnel, interview

#### Introduction

Individuals with multiple chronic conditions often face significant treatment burdens and fragmented care, which increase their risk of complications and mortality.<sup>1-4</sup> Holistic and well-coordinated care is essential for patients receiving care across clinics, as poor coordination can cause conflicting information, confusion, and reduced adherence to care recommendations.<sup>2,3,5,6</sup> Improving collaboration and coordination requires understanding healthcare providers' perspectives', which remain limited, but the factors influencing these efforts are well-documented.<sup>7</sup> These perspectives are key to understanding how healthcare providers manage the complexities of patient care effectively.<sup>8</sup>

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Terms like collaborative and coordinated healthcare service have been central to the health policy agenda for several years and endorsed by the World Health Organization for integrated care pathways.<sup>9,10</sup> As modern healthcare systems adapt to the rising demands of patients with complex chronic conditions, healthcare providers' roles are undergoing significant transformations, with collaboration and coordination highlighted as key to addressing the complexity of patient care.<sup>11</sup> Multidisciplinary meetings combined with patient involvement have been reported to improve clinical decision-making, coordinated care, and patient outcomes.<sup>12,13</sup> These meetings are defined as planned activities in which clinicians with diverse expertise and skills work together to assess, plan, and manage patient care.<sup>14,15</sup> They have been widely used for years, primarily to address new diagnoses and treatment plans during the diagnostic process.<sup>14,15</sup> Multidisciplinary meetings may be equally relevant for patients with multiple chronic conditions, as their treatment approaches can vary in person-specific ways. However, little knowledge exists on this population, who often experience fragmented care, despite its relevance to this resource-intensive group – many of whom have poor health-related quality of life.<sup>1–3</sup> A better understanding of how to collaborate and coordinate among healthcare providers is needed to grasp the dynamics and evolution of complex patient care.

The perspectives of healthcare providers on collaboration and coordination are crucial to understanding the effectiveness of complex care initiatives like multidisciplinary meetings for patients with multiple chronic conditions. These perspectives shape how care is integrated and managed across specialties. At Steno Diabetes Center Aarhus (SDCA) at Aarhus University Hospital (AUH), the initiative called Flexible Multidisciplinary Meetings aims to align these perspectives to improve care coordination and patient outcomes. The initiative prompted specialists from hospital clinics to identify patients with complex issues and gather relevant partners to address management challenges through collaboration with other specialties and patients. During the project, it became clear that despite good intentions, patient recruitment posed challenges that required further investigation.

This study aimed to explore hospital healthcare providers' perspectives on multidisciplinary collaboration and their openness to an intervention for managing complex care of patients with multiple chronic conditions.

### **Materials and Methods**

#### Design

In this qualitative interview study, the Interpretive Description approach<sup>16</sup> is employed as the research methodology. The notion of boundary work<sup>17</sup> – first coined by Thomas F. Gieryn<sup>18</sup> – serve as the theoretical lens. Interpretive description is an inductive methodology that addresses clinical challenges by generating questions from applied disciplines and engaging these systematically through qualitative data and analysis. Interpretive description aims to rethink previous understandings and uncover new insights, translating them into practice to enhance clinical methods.<sup>16</sup> Boundary work refer to purposeful efforts to influence the social, symbolic, and temporal boundaries, and distinctions, affecting groups, occupations and organisations. It may have potential consequences for the dynamics of collaboration, thus influencing power relations, work practices, learning, and effectiveness in organisations.<sup>17</sup> Three conceptually distinct but interrelated forms of boundary work have been described: Competitive Boundary Work, working *for* boundaries; Collaborative Boundary Work, working *at* boundaries; and Configurational Boundary Work, working *through* boundaries.<sup>17</sup> The notion of boundary work and the typology of its categories were utilised to enhance the inductive interpretive description approach. Its focus on organisation, collaboration, and both group and individual agency is highly applicable to the issues explored in the study, with the different forms of boundary work illuminating the dynamics at play between hospital clinics when introducing and carrying out collaborative practices.

### Setting of the Study

In 2021, SDCA developed a flexible multidisciplinary meeting model (hereinafter referred to as intervention). It enabled and prompted specialists from partnering clinics to refer patients with complex clinical challenges for multidisciplinary evaluation. The goal was to enhance professional collaboration, achieve more coordinated care, and relieve patients' symptoms and treatment burden. Partner clinics were selected based on data of which clinics most often treated patients that were followed at the outpatient clinic at SDCA for their diabetes. This led to the selection of 10 clinics at AUH in Denmark. Stakeholder

meetings were held by the project manager, a physician from SDCA, and the management teams of selected clinics, resulting in 9 collaborative agreements with the following specialities: Cardiovascular Diseases; Respiratory Diseases; Musculoskeletal and Connective Tissue Disorders; Infectious Diseases; Psychoses; Hormonal and Bone Diseases; Liver, Stomach, and Intestinal Diseases; Gastrointestinal Surgery; and Diabetes. Each clinic designated a physician as the contact person for the project, who also assisted in identifying patients suitable for referral to the intervention. The SDCA project team, consisting of a physician and a nurse, visited staff meetings at all partner clinics to inform them about the project, encourage physicians to refer patients, and distribute pocket cards with details on how to refer patients to the intervention through electronic patient system. Similar meetings were held for SDCA nurses, who were the only nurses with the ability to refer patients during the project period. After the information meetings, two follow-up sessions were held at each partner clinic and at SDCA to raise awareness of the project and encourage patient referrals.

### **Participants**

Purposive sampling was utilised in this study to ensure relevant participant selection. As only physicians from SDCA or partner clinics, as well as SDCA nurses, had the ability to refer patients to the intervention, they were selected as possible informants. From each partner clinic, either a physician who participated in the intervention was invited for an individual interview, or, if no one from the clinic had participated, the clinic's contact person was invited. The project nurse recruited junior physicians in advanced training in endocrinology and nurses at SDCA. To recruit junior physicians, the project nurse reviewed work schedules with the head secretary at SDCA, identifying candidates working across the diabetes clinic and a partner clinic with fixed available time slots and experience in multidisciplinary collaboration and multimorbidity. The selected candidates were invited via email. Regarding SDCA nurses, the project nurse introduced the opportunity to participate in the study during a joint nursing meeting and invited all nurses to learn more. The project nurse then selected nurses with substantial clinical experience and recruited with the aim of ensuring representation from the adult, obesity, and foot care units in the diabetes clinic to attain a diverse and knowledgeable group. Initially, physicians, junior physicians and nurses were invited to separate focus group interviews. However, due to logistical reasons, this was changed so physicians and junior physicians participated in individual interviews, while only nurses took part in focus group interviews. Additionally, physicians and nurses in the SDCA project group participated in individual interviews. The two methods contributed differently to our data collection. Focus groups facilitated discussions on multidisciplinary collaboration in a way that mirrored everyday conversations within homogeneous groups in the same work environment, allowing diverse viewpoints and attitudes to surface spontaneously through group interaction. The individual interviews provided more in-depth insights from each informant, capturing contextual information and descriptive narratives on the topic.<sup>19</sup>

### Data Generation

The data consisted of 22 semi-structured, individual, face-to-face interviews with fourteen physicians (eight men and six women), six junior physicians (four men and two women), and two nurses (both women), as well as two focus group interviews with a total of seven nurses (all women, with three participants in one group and four in the other). The interviews took place over a 13-month period from March 2023 to April 2024 and were conducted by either the first or the last author. To minimise barriers to open expression, the interviewers were neither part of the healthcare staff nor familiar with the informants. In the few cases where the last author was acquainted with an informant, the first author conducted the interview instead. Locations for all interviews were chosen within the hospital, close to the informants' daily work, ensuring comfort and easy accessibility. The rooms provided privacy, with screening and windows featuring a blurry effect. The author group collaboratively devised interview questions for the semi-structured guides, balancing an overarching framework with flexibility to provide informants with considerable opportunity to explore topics of interest related to multidisciplinary collaboration. This approach aligned with the study's exploratory nature, fostering new insights through descriptions and reflections.<sup>19,20</sup> To ensure validity, multiple healthcare professionals in the field reviewed the questions. The wording of the guides differed slightly between the interview types but revolved around the same topics (Table 1). The length of the individual interviews varied between 27 and 78 minutes, and the two focus group interviews took 44 and 52 minutes.

Theme	Questions							
	Physicians	Junior Physicians	Nurses					
Background	How long have you been employed at your clinic? What are your tasks and areas of responsibility?	Could you introduce yourself and explain your role at the clinic?	Could you introduce yourself – and how long you have been employed at the clinic?					
General Collaboration	When do you find that collaboration with other specialties is needed in the treatment of patients with multiple chronic conditions? Are there specific patients for whom collaboration is especially relevant? How does the current collaboration with other specialties in the treatment of patients with multimorbidity take place? How could collaboration be improved?	When do you find that collaboration with other specialties is needed in the treatment of patients with multiple chronic conditions? Are there specific patients for whom collaboration is especially relevant? How does the current collaboration with other specialties in the treatment of patients with multimorbidity take place? How could collaboration be improved?	When do you experience the need for collaboration with other specialties in the treatment of patients with multimorbidity? Are there patients with multimorbidity who are particularly relevant for collaboration – and how are these patients selected? How does the current collaboration with other specialties in the treatment of patients with multimorbidity take place?					
Value	How can it provide value for you (your clinic) to engage in collaboration with other specialties regarding patients with multimorbidity?	How can it provide value for you (your clinic) to engage in collaboration with other specialties regarding patients with multimorbidity?	How can it benefit the clinic to collaborate with other specialties in the treatment of patients with multimorbidity?					
The Flexible Multidisciplinary Meeting (Intervention)	How was the collaborative intervention presented to you and your colleagues? How does the collaborative project of the intervention fit into your daily work/ processes? How could the collaborative project fit in? What is required to integrate new initiatives into your current workflows? Have you referred patients to the collaborative project? If not, why? If yes, how did you select the patients? What needs to be done to refer more patients to the collaborative project? Have you participated in the intervention? And if not, why?	How was the collaborative intervention presented to you and your colleagues? How does the collaborative project of the intervention fit into your daily work/ processes? How could the collaborative project fit in? What is required to integrate new initiatives into your current workflows? Have you referred patients to the collaborative project? If not, why? If yes, how did you select the patients? What needs to be done to refer more patients to the collaborative project? Have you participated the intervention? And if not, why?	How was the collaborative intervention presented to you? Do you think it is a relevant project and intervention that you can make use of? How does the collaborative project fit into the clinic's daily workflows? How could the collaborative project fit in? What is required to integrate new initiatives into your current workflows? Have you referred patients to the intervention? If not, why? What potential learning aspects do you see for yourselves in participating in the collaborative project?					
Next step	What do you think the criterion for success is for the collaborative project of the intervention? What is needed for the project to succeed?	What do you think the criterion for success is for the collaborative project of the intervention? What is needed for the project to succeed?	What do you think the criterion for success is for the collaborative project of the intervention? What is needed for the project to succeed?					

#### Table I Questions From the Interview Guide Used in the Study

# Description of Informants

Table 2 presents characteristics of the informants. The data is based on self-reported information from each individual informant.

	Informant #	Field of expertise	Job title	Years since issue of healthcare professional license <sup>a</sup>
Individual Interviews	1	Dermatology	Physician	≥15 years
	2	Cardiology	Physician	≥15 years
	3	Diabetes	Physician	≥15 years
	4	Cardiothoracic and Vascular Surgery	Physician	≥15 years
	5	Psychiatric disorders	Physician	<15 years
	6	Cardiothoracic and Vascular Surgery	Physician	≥15 years
	7	Geriatrics	Physician	≥15 years
	8	Cardiothoracic and Vascular Surgery	Physician	≥15 years
	9	Diabetes	Physician	≥15 years
	10	Clinical Pharmacology	Physician	<15 years
	11	Clinical Pharmacology	Physician	≥15 years
	12	Geriatrics	Physician	≥15 years
	13	Neurology	Physician	≥15 years
	14	Cardiology	Physician	≥15 years
	1	Endocrinology and Internal MedicineDiabetes	Junior Physician	<15 years
	2	Endocrinology and Internal MedicineDiabetes	Junior Physician	≥15 years
	3	Endocrinology and Internal MedicineDiabetes	Junior Physician	<15 years
	4	Endocrinology and Internal MedicineDiabetes	Junior Physician	<15 years
	5	Endocrinology and Internal MedicineDiabetes	Junior Physician	<15 years
	6	Endocrinology and Internal MedicineDiabetes	Junior Physician	<15 years
	1	Diabetes	Nurse	≥15 years
	2	Diabetes	Nurse	<15 years
#I Focus Group Interview	3	Diabetes	Nurse	<15 years
	4	Diabetes	Nurse	≥15 years
	5	Diabetes	Nurse	≥15 years
#2 Focus Group Interview	6	Diabetes	Nurse	<15 years
	7	Diabetes	Nurse	≥15 years
	8	Diabetes	Nurse	≥15 years
	9	Diabetes	Nurse	<15 years

Table 2 Characteristics of the Informants in the Individual and Focus Group Interviews

Note: <sup>a</sup> To ensure anonymity, the exact number of years since the issue of the healthcare professional license has been categorised as either <15 years or ≥15 years.

### Data Analysis

The interpretive description methodology provided a framework for a four-phase iterative analysis process.<sup>16</sup> In the first phase, all interview data were verbatim transcribed and then imported into the qualitative data management software

NVivo<sup>TM</sup>14. The data were then independently coded by the first and last authors for emerging patterns and connections. Following this, authors MA, AKS and CGP made an initial analysis, using constant comparison to investigate key elements aligned with the study's objectives.<sup>16</sup> In the second phase, the first and last authors re-examined the transcripts, carefully calibrating and elaborating the initial analysis.<sup>16</sup> In the third phase, a thorough assessment of relationships within the data was made, leading to the identification of thematic categories that shaped the primary classifications and interpretations.<sup>16</sup> Finally, in the fourth phase, authors MA, AKS and CGP distilled the key messages and insights from the analysis.<sup>16</sup>

# Results

Three main themes were identified in the data analysis and presented in the results section. Theme 1: Wide Support and Need for Multidisciplinary Collaboration, with subthemes a) Enhancing Patient Care, Professional Expertise, and the Healthcare System, b) The Need for Enhanced Multidisciplinary Collaboration and the Presence of Silo Mentality, and c) Difficulty in Patient Selection for Collaboration. Theme 2: Existing Collaboration Between Clinics – and Their Limitations, with subthemes a) Diverse Levels of Collaboration: From Phone Calls to Multidisciplinary Conferences, and b) Barriers in Collaboration: Time Constraints and Experience Disparities. Theme 3: Introducing a Collaborative Initiative: The Intervention, with subthemes a) Positive Reception of the Intervention, b) "It is About Time": Time Pressure as an Obstacle for the Intervention, c) "Initiatives Can Be Forgotten": Lack of Visibility, Information, and Precision About the Intervention.

# Wide Support and Need for Multidisciplinary Collaboration

### Enhancing Patient Care, Professional Expertise, and the Healthcare System

Across all informants, there was broad support for multidisciplinary work routines in general and a recognition of the need for this concerning patients with multimorbidity. Most informants expressed interest in either more collaboration between clinics or a strengthening of current collaboration through more structured and efficient arrangements. All informants generally perceived multidisciplinary collaboration as vital and beneficial, both for patients and themselves, as well as for the hospital system as a whole. Multidisciplinary collaboration was mentioned by every informant as an important service that could lead to more enhanced and coordinated care for patients, spare them for unnecessary hospital visits, possibly delay their need for treatments, and improve communication and clarify the distribution of responsibilities between healthcare providers. Also, the understanding of multidisciplinary collaboration expressed by the informants underscored it as a means to enrich professional expertise, being an asset that may serve as a competence boost, continuing education, and a motivating "spice" in the workday.

Multidisciplinary collaboration is a great way to gain a competence boost and continuing education. Also, it is a gift to be able to hear and join the discussions that can occur between specialists. (Physician 7)

Collaboration was seen not just as a clinical service but also as a way to expand professional networks and a learning space for keeping knowledge up to date. In their depictions, it could foster discussions that build professional confidence and pride and provide them with greater insight into each other's perspectives and the complexity of multimorbidity. Additionally, the physicians in particular emphasised the advantages of multidisciplinary collaboration in terms of resource allocation, believing that over time, collaboration could decrease the overall workload. Several informants held the belief that collaboration could ensure qualified assessments by appropriate healthcare providers, resulting in fewer consultations over time and thereby resource savings. For instance, a junior physician assumed that collaboration across clinics could redistribute time more efficiently, leading to a prioritisation of patients in greatest need of additional care, fostering equity within the healthcare system.

### The Need for Enhanced Multidisciplinary Collaboration and the Presence of Silo Mentality

While all informants experienced existing multidisciplinary collaboration in their work, with several being satisfied with the extent, many informants expressed a need for more collaboration with other clinics or a strengthening of current collaboration. Physicians, junior physicians, and nurses recounted encountering various collaboration challenges, which to them underscored the potential for enhancing multidisciplinary collaboration. A physician emphasised the challenge of

determining when it was appropriate to collaborate with others, not wanting to disturb fellow specialists, while another physician explained that, out of respect for each other's expertise, she refrains from adjusting medications prescribed by other clinics for shared patients.

We do not regulate each other's [different clinics'] medications much. If I have a patient for check-up and see they visited the cardiologists, where their medication was adjusted, I do not interfere. For hospitalised patients, we might consider prescribing diuretics – but if they are in a treatment course with another clinic, that is respected. (Physician 4)

A junior physician highlighted the lack of shared initiatives directed at patients with multimorbidity and complex care needs, such as a joint clinic, expressing frustration over the disappearance of similar initiatives as he experiences overlaps between specialties, where patients may get lost. Several other junior physicians expressed a desire for more fixed collaborations and active multidisciplinary dialogues in order to receive relevant assessments, gain clarity on responsibilities, avoid unnecessary duplication of work as well as conflicting opinions.

At times, we risk duplicating examinations because we think we are managing the same. (...). It can be really hard to keep track of who is managing what and what is happening within different organ systems, especially with the patient with multimorbidity, who may have many contacts in different clinics. (Junior Physician 3)

Several junior physicians mentioned meeting diverging opinions when contacting clinics regarding shared patients, facing recurrent discussions as to where patients should be placed, remarks about the lack of clinic availability, or simply being told that the issue does not fall within their purview. This leaves the informants at a standstill, unable to proceed. An experience of reluctance to collaborate was also mentioned by several nurses, with one nurse in a focus group discussion stating that some clinics were rigid in their interactions with other clinics despite having a shared influence on the same patients.

We experience that it can be a bit more old-fashioned, a bit more rigid, with some of the other clinics, who also have a significant influence on a shared patient's course of treatment. I think it varies greatly how willing they are or how much desire they have to collaborate. (Nurse 3)

Similarly, another nurse in a different focus group believed that each specialty was highly divided, resulting in a monodisciplinary mindset sometimes prevailing in the hospital. This understanding was a recurring theme among a little less than half of all the informants. Like the nurses, more than a handful of physicians and junior physicians described experiences where clinics had become so subspecialised that they lost sight of the complex needs of patients with multimorbidity. Instead, clinics may tend to focus solely on one specific disease, leading to patients not being met within the optimal framework of understanding or important perspectives being lost.

Once the patient has been sent off, it is out of one's mind because we have become so specialised, focusing on specific disease categories. When our patients go to a [different] clinic, we think it is under control, but there are just some patients who fall through the cracks. (Physicians 13)

As their workday unfolds at a specialised university hospital, several of the informants regarded multidisciplinary collaboration as a possible counterbalance to the potential emergence of a silo structure characterised by a dominant monodisciplinary mindset.

It is some highly specialised specialties one is up against (...), each specialty tends to put on blinkers, so there is a need for more collaboration across clinics when patients have multiple illnesses. (Physician 11)

#### Difficulty in Patient Selection for Collaboration

The study reveals that all informants acknowledge the importance of being aware of patients who might benefit from collaboration, recognising that they often encounter these patients. A physician added that many patients coming to the hospital require a multidisciplinary approach, stressing a significant need for collaboration. However, more than a handful of informants also described the challenge of actually identifying which patients could be relevant to collaborate about.

It is a difficult to determine when collaboration is needed because it is very individual to each patient. (.). In my mind, I cannot easily picture a specific patient group where I think "here it is obvious". (Physician 14)

I have found it challenging to consider with a patient, 'here, it is obvious that I should arrange for us to meet with the pulmonologist or the gastroenterologist'... that these specific diseases exacerbate each other. I believe patients with difficult issues typically have issues at home, lack resources and relatives – or are missing something else. (Junior Physician 6)

Likewise, some nurses in one of the focus groups agreed on the difficulty of assessing whether a patient falls into the "challenging category" or just below it. This challenge in identifying patients generally characterises all informants, with the necessity of considering the patient as a whole often being highlighted. When discussing which patients could benefit from collaborative care, their suggestions were broad and numerous, with several informants largely referring to the fragile, difficult, or complex patient with multimorbidity. Several proposals were listed regarding considerations that could characterise this patient, including focus on clinical knowledge, mental health issues, socioeconomic factors, and level of health literacy. Table 3 presents these proposals in greater detail.

The informants provide a comprehensive description of which patients are relevant for multidisciplinary collaboration, directly expressing the challenge of delimiting and specifying the patient group. However, it also highlights the broad range of possible patients involved, further emphasising the need for collaboration across clinics.

Point of Attention	Characteristic
Clinical knowledge	<ul> <li>High complexity of medication regimen</li> <li>Affiliated with several hospital clinics</li> <li>High number of consultations</li> <li>High number of hospital admissions</li> <li>Difficulty in making a diagnosis</li> <li>Presence of issues from multiple organ systems</li> <li>High number of diseases and complexity in their composition</li> <li>High BMI (Body Mass Index)</li> <li>Lack of achievement of treatment goals</li> </ul>
Mental health issues	<ul> <li>Mental illness (anxiety and depression most frequently mentioned)</li> <li>Dementia</li> <li>Addiction (alcohol abuse, substance abuse)</li> <li>Emotional instability</li> <li>Phobias</li> </ul>
Socioeconomic factors	<ul> <li>Living alone</li> <li>Low financial status</li> <li>Unemployment</li> <li>Ethnic minority status</li> <li>Language barriers</li> <li>Lack of social network</li> </ul>
Health literacy	<ul> <li>Inability to take care of oneself</li> <li>Unable to ask about, remember, understand, and act upon health information</li> <li>Limited mental surplus</li> <li>High level of non-attendance of consultations</li> </ul>

Table	3	Overview	of	Informants'	Suggestions	on	Patient	Charac	teristics	s for '	Which
Multidis	scipl	inary Collat	orat	ion Could B	Be Beneficial.	These	Charac	teristics	Often	Coexist,	With
Their Combination Being the Decisive Factor											

# Existing Collaboration Between Clinics – And Their Limitations

Diverse Levels of Collaboration: From Phone Calls to Multidisciplinary Conferences

While almost every informant calls for more comprehensive and fixed collaboration, describing various collaboration challenges, the study reveals that the informants often engage in various types of collaboration with other specialties. These collaborations, both formal and informal, are a regular aspect of their work.

I think we have many levels of collaboration, everything from a phone call and some advice, to transferring the patient – and everything in between. (Physician 7)

While collaboration methods between clinics vary, correspondence letters and phone calls were mentioned by the informants as the most accessible and frequently used means for collaboration on shared patients.

Across clinics, it is common for us to call the colleagues in the relevant clinics who are also treating the patient. There is a lot of telephone collaboration – or through what is called a correspondence letter or a referral. (Junior Physician 4)

Moreover, multidisciplinary collaboration was brought up by informants concerning requesting inter-clinic consults, where specialists from other clinics assess and advise on patient treatments, as well as the use of specific advisory helplines, where healthcare providers can receive guidance from specialists in different fields. Informants also experience collaboration through written referrals to other clinics or when gaining insight into patients' courses of treatment by reading each other's medical records. One of the more significant ways of collaboration revealed was the use of a wide range of multidisciplinary team (MDT) conferences among clinics, which well over half of the informants named. Following their accounts, these MDTs vary in their characteristics. Some conferences were well-established and recurring, while others unfolded on an ad hoc basis. In some, patients participated, while in others, the meetings were held without them present. Additionally, the composition of specialists represented also varied across the mentioned MDTs, and whether nurses were involved or not.

One of our clinics collaborates extensively with the rheumatologists, having initiated some conferences. We have numerous conferences with other clinics. With connective tissue disease, we sit together – without the patient – and discuss their cases. In the allergy clinic, there is close collaboration with ear, nose, and throat specialists, where they make a plan, together with both the patient and the pulmonologist. (Physician 4)

Another physician explained that they conduct MDTs with other clinics, specifically involving shared patients and their relatives during admissions and discharges, referring to these forums as "goal-setting meetings", "relative consultations" and "multidisciplinary conferences", noting that: "a beloved child has many names" (Physician 12). In describing MDTs, the informants generally portrayed them as rewarding and necessary, highlighting how well-defined issues about shared patients were addressed by cohesive multidisciplinary groups with the aim of aligning expectations, planning care, sharing knowledge, viewing the patient from multiple perspectives, solving problems through shared decision-making, and shortening treatment courses.

#### Barriers in Collaboration: Time Constraints and Experience Disparities

While the informants revealed extensive and multifaceted ongoing collaboration, they also addressed generally limiting factors of the existing forms of collaboration. Going through medical records and each other's notes were described by a junior physician as inefficient, while several junior physicians criticised phone calls as troublesome and limiting, noting their disruptiveness and the possible difficulty reaching a specialist familiar with the patient in question. Also, a junior physician believed that the distance over phone could result in other clinics being less willing to embrace the idea of shared help and responsibility. The shortcomings of correspondence letters were highlighted by several physicians, with them noting that the response time could be long, which was suboptimal when information on medication interactions was needed. Additionally, it was said that responding to these letters could be time-consuming. This statement reflects a common perception among nearly every informant on time as a barrier to multidisciplinary collaboration, despite its potential rewards. According to all informants, their work reality was depicted as one where busyness, time pressure, fully booked schedules, and a lack of flexibility were prevalent.

You are fully booked – every minute is filled with patients (...). You stick to what you are used to in a busy clinic, where you sometimes fall behind right from the start. The next patient is already waiting, and there is no time for deep reflection. (Physician 9)

As a result, time is viewed as a scarce resource, quickly consumed. In their attempt to complete their programs, it was described as difficult to focus on or be involved in initiatives that promote collaboration, which might easily get deprioritised. It requires extra effort and time to fully consider what could be changed regarding the treatment plan of patients, to stay aware of existing collaborative initiatives, or to think beyond immediate tasks. Here, "production" was mentioned by a handful of informants, most being physicians, as a term frequently used at the hospital, referring to getting through a fully booked schedule of patients. With production in mind, one physician described daily work as akin to being on a hamster wheel, striving to keep it turning, while a junior physician emphasised that most days it was purely about "survival" to get through the daily program. The duration of consultations with patients, typically around 20 minutes, was also mentioned, particularly by junior physicians and several nurses, as being short and sometimes unrealistic for covering everything they deem relevant. They highlighted the challenge of reading the patients' case history, call them in, examine them, talk to them, and document their verdict, leaving little time for reflecting on the need for collaboration with clinics. This was especially evident for junior physicians, as they do not have fixed programs and rarely see the same patient continuously. Consequently, they have limited time to comprehend the patient and establish an alliance with them.

At the annual check-up, I have half an hour to write, talk blood pressure, kidney function, feet, eyes, and discuss other concerns. It might be because I am a young physician and do not have the routine ingrained yet. Our specialists can do it very quickly, but I might need to look up guidelines or ask a colleague, which takes time. (Junior Physician 4)

The study reveals clear contrasts between the physicians and junior physicians in their descriptions of work routines, where differences in experience emerged as an additional barrier to enhanced collaboration across clinics. Physicians described having undergone a gradual accumulation of both a professional network and experience, making it easier to manage more tasks, to informally obtain multidisciplinary input from other specialists (eg calling a trusted colleague in a different clinic), and to both recognise and understand patient complexity.

I can recognise it [complexity]. I have the empirical knowledge and experience with it, as well as a systematic approach to it, which makes it manageable. (Physician 7)

Conversely, most of the junior physicians described the challenge of grasping the complexity before them during short consultations, reflecting in the moment, or knowing patients well enough to identify who could benefit from collaborative initiatives. Instead, they imagined that physicians could expedite tasks, make reflective decisions about collaborative options, and have a better sense of how to guide patients effectively.

# Introducing a Collaborative Initiative: The Intervention

#### Positive Reception of the Intervention

Focusing specifically on the intervention, the study reveals that all informants viewed it positively, considering it important and relevant for patients and healthcare providers alike, despite the informants having different levels of familiarity with the intervention – some having participated in it while others possessed limited knowledge of it. However, the study additionally shows that introducing a new approach to multidisciplinary collaboration within the described hospital context can be challenging. Concentrating on immediate thoughts, the informants saw the intervention as having its justification in supporting patients with multimorbidity where elements in their treatments do not fit together, enabling the patients to achieve a sense of security and motivation rather than frustration or worry about their overall care.

When you have multiple illnesses, I think many patients worry whether we have everything under control or only look at one aspect. and the ability to sit in a room and present multiple physicians from different clinics and a nurse gives the patient

a strong feeling of professional support. When we tell [the patients] that we will call colleagues, coordinate, arrange discharge. I think they gain some sense of security. (Physician 12)

In addition, the intervention was described by several informants as challenging the previously mentioned subspecialisation that they believe exist at the hospital, as the setup allows for considering all aspects of the patient, rather than just one specific disease, providing a comprehensive view that can address issues and enhance treatment. An understanding was also articulated that the intervention, besides having the best interest of this specific group of patients, could move knowledge across clinics, elevate professional quality among specialists and, in the long term, save resources and reduce time spent on some patients. Nevertheless, significant barriers to introducing the new intervention were also revealed.

#### "It Is About Time": Time Pressure as an Obstacle for the Intervention

According to the informants, one of the major challenges regarding the intervention stems from the previously described reality of their workday, where time constraints and busyness might act as barriers to multidisciplinary collaboration. In the specific context of the intervention, these time-related challenges present themselves again in other ways, introducing additional pressures or exacerbating existing ones. This become evident as many physicians emphasised that their workflows, characterised by rapid pace, time pressure and packed daily schedules, pose challenges in prioritising the intervention. Meeting physically for the intervention was stressed as time-consuming, both for finding time when everyone could be available and for transportation time within the hospital.

In a perfect world [the intervention could work], but realistically, it can be difficult – simply due to time constraints. Fundamentally, it would probably be more realistic with a phone call. The need to meet in person is a barrier... such as having to spend time on transportation. To be honest, I find it hard to believe that any specialists could allocate the time. It is about time. I think it will be difficult to get [the intervention] running. (Physician 5)

For physicians, time also complicates other inherent tasks of the intervention. A handful of physicians mentioned the time-demanding aspect of both informing and referring patients to the intervention, particularly given the short consultation time, as well as preparing presentations for the intervention on the issues at hand. Similarly, the junior physicians cited the busy daily running of the clinic and short consultation times as barriers for utilising the intervention, while additionally mentioning their lack of experience once again, here specifically as a contributing factor in their limited use of this specific intervention, as it challenges their ability to work efficiently with the tasks embedded in the intervention.

Time and experience are the two things that make considering [the intervention] difficult. The time aspect is probably the biggest obstacle. You need to finish the consultation, inform the patient, and prepare a good intervention presentation on what needs to be addressed. I am not sure if any of the other junior physicians gets it done. I doubt it. The last thing I need in my schedule as a junior physician is more work. The experience that could make you do things a bit faster, we just do not have that yet. (Junior Physician 2)

Besides time constraints, they rarely see the same patients or have the opportunity to follow up on them, resulting in a lack of familiarity that they deem necessary to refer to the intervention. Therefore, a few junior physicians believed that physicians could more easily use the intervention as they are more experienced, have a deeper understanding of their patients, and might have more time to review patient records. They express a similar sentiment about the nurses, with a few junior physicians believing the nurses to be better equipped to find patients for the intervention as they have more time to delve into who the patient is and understand their concerns. However, the majority of the nurses similarly described how their short consultation time, filled with many essential tasks, makes it difficult to find the time to incorporate the intervention into the agenda, something that lively discussions in one of the focus groups led a nurse to express clearly.

The doctor consultations are only 15 minutes, and then it comes like pearls on a string – one after the other. It is the same with the nurse consultations. I feel like I already have plenty to cover. It can be hard to remember that there is also an opportunity [the intervention] here. It requires a broader perspective on the entire process and the whole person sitting in front of you. (Nurse 3)

#### "Initiatives Can Be Forgotten": Lack of Visibility, Information, and Precision About the Intervention

Besides time pressure and experience level, other obstacles were also revealed in introducing the intervention, including lack of visibility, information, and precision about the intervention, leading to limited awareness of both its existence and potential value. The majority of the informants described it as essential to repeatedly remind clinics that the intervention exists, emphasising the need for more active promotion, constant reiteration, and loud advocacy before it would become ingrained in their awareness as a natural consideration. This call for greater visibility also stems from the risk that the intervention might otherwise drown in the "noise" from the numerous other existing initiatives at the hospital, particularly those introduced by the diabetes clinic, a concern voiced by over a third of the informants.

It is about visibility. We often need reminders because new initiatives are constantly emerging – everywhere. So, even though they are excellent, initiatives can be forgotten. (Junior Physician 6)

It [the intervention] is also one of many initiatives. We [the diabetes clinic] are an organisation with numerous initiatives and services – and sometimes it is just a case of. remembering them all. (Nurse 4)

A few informants, including nurses and junior physicians, who were newly employed, mentioned finding it challenging to remember the range of possible initiatives, with a handful of informants also expressing confusion about the similarity of the intervention to previously existing services at the hospital. Turning to the limited awareness of the value of the intervention, a handful of physicians mentioned lacking information and clarity on its purpose. They expressed a need to better understand its value and benefits, with several highlighting the importance of receiving oral or written feedback, such as an intervention-commentary, after a conference to be able to grasp its effectiveness and potential outcomes. Most of the junior physicians, along with several nurses, emphasised a similar need. Specifically, they wished for examples of previous intervention conferences, both successful and less successful ones, to better understand what the initiative can achieve and demonstrate its meaningful impact.

Give some examples of specific intervention cases, and then it might occur to some, 'oh, you can have an intervention about that?', because sometimes we are stuck in our routines, seeing these patients, starting here, and then proceeding with certain actions. It might be that people did not know it was possible or had not thought of it themselves. (Junior Physician 3)

Continued, physicians, junior physicians, and nurses alike described how these intervention examples could showcase why the initiative should be prioritised, what it can accomplish compared to more customary collaborative methods, such as phone calls, and ensure that the intervention could become ingrained in one's awareness, all aspects they are currently lacking. It is also noted that intervention examples might help address the last major challenge, namely identifying the appropriate patient group. While several informants mentioned that the intervention should target "the right patients", "the few patients" and "a small group of patients", over one-third of the informants – primarily junior physicians and nurses, but also a few physicians – described uncertainty about who could be the appropriate patients for the intervention. This aligns with the previously described overarching challenge of identifying which patients are relevant to collaborate on, an issue that evidently also applies to the intervention. Several informants mentioned that examples of previously held intervention meetings could also be helpful in this aspect to gain a better understanding of the desired patient profile.

I think it would be beneficial for us to hear about some successful intervention meetings, so we can better understand which patients it makes sense to convene. I see the relevance [of the intervention], but I am unsure how to identify those patients where I think the intervention is appropriate. (Junior Physician 3)

The informants' uncertainty about which patients are appropriate to refer is linked to their perception that the intervention lacks concreteness and precision, especially given the high number of patients with multimorbidity at the hospital. Therefore, they express a need for specific criteria to guide them in patient selection.

The intervention becomes more operational if we had more precision about which patients we want to reach, otherwise it becomes fluffy. some criteria would help me a lot to undertake the task. If I have to think too broadly, I will not get it done. I simply do not have the time. (Junior Physician 2)

The informants described that specific criteria could make the intervention more useful as they would be more enlightened and equipped to utilise it. As seen in the last quote, examples of the intervention can also help lessen the described barrier of time pressure concerning the intervention as junior physicians and nurses believe that clear-cut criteria can reduce uncertainty and provide clarity, making it easier and simpler to make use of the intervention in a busy workday.

### Discussion

This study explored hospital healthcare providers' perspectives on multidisciplinary collaboration and their openness to an intervention for managing complex care of patients with multiple chronic conditions. The informants agreed that collaboration and coordination are important and could improve care coordination, enhance patients' sense of security, clarify professional roles, enrich expertise, and streamline resource use. However, organisational structures and professional dynamics often hinder these efforts. A key challenge related to the intervention was identifying patients with complex cases for referral.

Our findings highlight the need for improved collaboration and coordination in complex cases, with organisational and professional dynamics emerging as key challenges – a pattern consistent with the literature.<sup>7</sup> In our study, clinical managers showed a willingness to engage in collaborative boundary work by realigning established frames to overcome rigidities,<sup>17</sup> evidenced by signed agreements and the designation of a professional to recruit patients with complex cases. Despite these efforts, the project group reported that only a few healthcare providers referred patients to the intervention, suggesting that further engagement was needed. Our informants also displayed a willingness to engage in collaborative boundary work with other specialties on complex care, such as negotiating and reinterpreting custom practices in work routines, to collaborate and coordinate in order to achieve shared goals and do every day work that could not be accomplished as easily alone.<sup>17</sup> Despite this openness, our informants also reported major challenges integrating new collaboration initiatives into their daily workloads, with more physicians expressing concerns that participating in the intervention might affect production demands, understood as them failing to complete their daily programs within a siloed organisation. This may present a challenge to collaboration and coordinated complex care, as accessibility and bridging terminological gaps have been reported as important for effective collaboration,<sup>21</sup> and could reflect the clinic's willingness for change. Our informants described current collaboration as primarily phone calls or electronic correspondence, with each provider independently coordinating treatment. This practice may work in some cases but seems less effective in complex cases, where a multidisciplinary team could be needed – an initiative that has been reported to lead to changes in diagnostic confirmation, therapeutic strategy, and management.<sup>22</sup>

The current collaboration approach may also prevent healthcare providers from achieving positive outcomes of collaboration, such as improved staff attitudes, job satisfaction, efficiency, well-being, service quality, and reduced errors, burnout, and turnover.<sup>7</sup> Lack of collaboration and coordination in complex cases may also stem from team barriers, such as hierarchical imbalances, power dynamics, negative collaboration experiences, or unprofessional behaviours,<sup>7</sup> as well as individual barriers, like a lack of research training or early-career professionals placing less importance on new interventions compared to their late-career counterpart.<sup>23</sup> It is, however, unclear whether these factors influenced our study, but it was revealed that the junior physicians did not perceive themselves as having the necessary experience or expertise ingrained yet to take on various tasks comprising collaborative options for patients with complex cases, something that hinders collaboration. Instead, they displayed nuances of competitive boundary work, describing their roles in a maintaining and demarcating manner, emphasising boundaries and distinguishing themselves from nurses and physicians, whom they believe are better equipped to understand patient needs and more easily use the intervention.<sup>17</sup>

A major challenge expressed by informants was identifying complex cases to refer to the intervention. Selecting patients requires a thorough understanding of the patient, which junior physicians in our study often found challenging due to their limited ongoing patient follow-up. The physicians were more comfortable handling complex challenges themselves based on experience but still demonstrated difficulty in appointing the right patient for the intervention. Notably, nurses in the study also found it challenging to identify relevant patients to refer to the intervention. This suggests a need for other strategies to identify complex issues that would benefit from a multidisciplinary setup; our informants expressed a need for clear inclusion criteria and a compelling narrative, or for seeing the effects of the

intervention clearly demonstrated. These factors often influence healthcare providers' motivation to participate in new initiatives.<sup>24</sup> Although the informants found it challenging to identify relevant complex cases, they provided suggestions for patient profiles they considered suitable for referral. They also highlighted the importance of clinical intuition and strong familiarity with patients when selecting complex cases. Despite these efforts, specialists referred only a small number of patients during the project period, and evidence supporting the effectiveness of these criteria for identifying patients with complex issues remains limited. Other researchers have characterised high-need populations as those with serious illnesses, conditions associated with a high risk of mortality, and significant negative impacts on daily functioning and quality of life.<sup>25</sup> This characteristic seems relevant to test as an inclusion criterion to help specialists more easily identify suitable patients for the intervention.

#### Method discussion

In the following, the four key elements for evaluating the Interpretive Description Methodology are outlined: epistemological integrity, representative credibility, analytical logic and interpretive authority.<sup>16</sup>

Our study maintains *epistemological integrity* by aligning its qualitative methodology with the research aim of exploring hospital healthcare providers' perspectives on multidisciplinary collaboration and on a new collaborative intervention. Here, the interpretive description approach is well-suited in the context of understanding the nuances of collaborative practices and challenges, professional roles, and the impact of different types of boundary work on organisational dynamics. Semi-structured interviews allowed for the emergence of rich and contextually grounded insights, avoiding oversimplification of the complexities inherent in multidisciplinary collaboration on complex care as well as receptivity to a new intervention.

*The representative credibility* was enhanced as our findings are derived from diverse informants, consisting of physicians, junior physician and nurses, working in various hospital clinics. This diversity ensures a holistic representation of perspectives on multidisciplinary collaboration and receptivity to a new intervention, acknowledging variations among different professional groups, levels of work experience, work routines and clinic cultures. The findings resonate with real-practice experiences, with informants' quotes used thorough to substantiate key themes and results. While acknowledging that the sample size of 3 and 4 participants per focus group may limit the range of opinions presented, it also demonstrated a strength by providing a clearer sense of each informant's perspective on the topic and allowing more time for each participant to speak. This was particularly beneficial given that the participants in the focus groups were highly involved, ensuring rich and detailed discussions and deeper exploration of viewpoints.<sup>19,20</sup> Using two interview methods in the study might also be a limitation, as it increases the complexity of data analysis and risks unequal weighting of findings. However, as the interview guides were designed to complement each other, the results became more comparable, with the multi-method approach proving both breadth and depth in the data, offering insights into both individual and collective perspectives.<sup>20</sup> However, a limitation was that only one professional group participated in the focus groups, creating an imbalance in informant representation.

Analytic logic and interpretive authority were attained through working inductively with the data and carrying out analysis based on the Interpretive Description four-step process.<sup>16</sup> Engaging in interpretive description with boundary work made it possible to deepen and unfold our data, providing depth to interpretations of collaborative views, as well as the reception and attitudes towards the intervention.<sup>17</sup> This way of engaging and working with the empirical material ensured that our conclusions logically followed from informants' accounts, thus being directly grounded in the data and findings.

### Conclusion

This study highlights hospital healthcare providers' recognition of the critical need to strengthen collaboration across specialties to manage complex cases effectively. Significant barriers, such as siloed specialisation and heavy workloads, call for targeted political and managerial action. Challenges in identifying complex cases point to the need for methods that adopt a holistic, patient-centred approach to gain a nuanced understanding of the challenges individuals face in living with multiple chronic conditions and receiving care across different hospital clinics. In the future, this approach could

streamline the referral of complex cases, with additional research required to explore the potential of flexible multidisciplinary team conferences in enhancing collaboration within complex care pathways.

### **Data Sharing Statement**

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

### **Ethics Approval and Informed Consent**

The study was approved by The Central Denmark Region Committees on Health Research Ethics (case number 1-16-02-54-23), the regional authority responsible for assessing research projects and ensuring adherence to good research ethics and GDPR regulations. An application (case number: 1-10-72-6-23) was submitted to The National Committee on Health Research Ethics, which reviewed the project and concluded, based on their legal framework, that registration was not required. The study is conducted in accordance with the Helsinki Declaration, with all participants providing informed consent for the interviews and the anonymised use of their responses in scientific publications.

### Acknowledgments

Thank you to the healthcare providers who shared their insights for this study. Your contributions have been vital in highlighting the need to improve clinical practices for patients with multimorbidity, paving the way for better outcomes.

### **Author Contributions**

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work. TBM and SBP were not involved in the data engagement process, a deliberate choice as they contributed to the data material, and an objective approach to the article was desired.

### Funding

The project has received funding from the Novo Nordisk Foundation, grant number NNF20SA0035556.

### Disclosure

The authors declare that they have no competing interests in this work.

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