

## Patients' perceptions of continuity of care across primary care level and emergency departments

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### Abstract

**Background:** Healthcare coordination and continuity of care conceptualize all care providers and organizations involved in health care to ensure the right care at the right time. However, systematic evidence synthesis is lacking in the care coordination of health services. **This study aims:** To assess patients' perceptions of continuity of care (COC) across primary care level (PCL) and emergency departments (EDs) and to identify contextual and individual factors that influence this perception. **Methods:** A Cross-sectional study design was conducted in five emergency departments in KSA. Participants 501 adult patients referred to the ED by their primary care physician (PCP). Patients with cognitive impairment or in critical condition were excluded. **Results** Patients perceived high levels of the three types of COC. On an individual level, older patients showed a perception of higher levels of continuity. Lower levels of informational and management continuity were observed among patients suffering from chronic diseases and patients with a high level of education. Patients also perceived a redundancy of medical exams, in parallel to a high degree of accessibility between care levels. On an organizational level, three structural factors were identified as barriers to COC, namely, ED workload, suboptimal sharing information system and the current fee-for-service payment system that encourages competition and hinders coordination between actors. **Conclusion** Healthcare services seem satisfying for patients and easily accessible. However, efforts need to be directed towards improving their efficiency. A stronger PCL is also needed to benefit the healthcare system by reducing overuse of emergency services. On the individual level, a more enhanced patient-centered approach could be beneficial in improving patients' experience of care.

**Keywords:** Patients' perceptions, Continuity of care, Primary care level, and Emergency department.

### Introduction

Understanding continuity and coordination of care is vital for delivering and utilizing primary health care (PHC). PHC covers the principle of equity, community participation, and affordable/appropriate care. PHC provide primary care (PC) where people make first

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contact with the health care delivery systems. The concept varies care continuity, coordination, and integration, and patient-centered care, continuous, cohesive and consistent care for illnesses <sup>(1)</sup>. Care coordination ensures that all providers and organizations involved in health care provide the right care at the right time, involving a people-centric approach and ensuring clients are duly informed of their preferences <sup>(2,3)</sup>.

This concept also refers to healthcare components from various sources, supports, patients, types of care, service levels, and time dimensions <sup>(4)</sup> or perspectives at the individual, organizational or system levels <sup>(5,6)</sup>. Care coordination ensures people-centered care, covering discrete healthcare events experienced by people as coherent and interconnected over time, consistent with their health needs and preferences, bringing and meeting health needs and ensuring integrated care <sup>(7)</sup>. Furthermore, care coordination refers to inter-professional care, patient-centered care, self-management support, prevention, screening, primary care, and treatment of illnesses <sup>(8,9)</sup>.

Other features of health care coordination include multidisciplinary services, establishing cooperative and ongoing relationships, and delivering multiple health services (e.g., case management of all stages of disease), especially for people with multiple morbidities <sup>(7,10)</sup>. Moreover, healthcare coordination or continuity care can be explained as informational continuity (communication among providers), relational (provider-patient relationship, team-driven continuity), and management continuity (activities for systems and service organizations) <sup>(11,12)</sup>. This informational and relational care coordination occurs at the individual and organizational level for relationship, communication and cooperation between providers and users <sup>(12,13)</sup>.

The level of stakeholders' engagement in care continuity of care depends on the hierarchical and interdependent relationship in the context of time and setting of health systems <sup>(6)</sup>. Care continuity within the organization and systems supports planning and managing integrated health services by involving interdisciplinary or inter-professional teams <sup>(14,15)</sup>. Shared decision-making is essential in policy, practice, and research that could influence people-centered integrated public health and PC <sup>(7)</sup>. Consistent, timely communication of health record information between emergency departments (EDs) and primary care level is a necessity for the provision of high-quality patient care <sup>(16)</sup>. Indeed, communication issues between the two levels of care have been identified as an important contributor to the breakdown in continuity of care (COC) <sup>(17)</sup> and have resulted in delays and omissions in follow-up care for patients <sup>(18)</sup>.

The scope of care provided in the emergency department varies depending on the patient's condition and severity that ranged from immediate to minimal or non-urgent. Moreover, the triage and reception area are the front line that faces the stream paths and the indicative roadmap for patient care, which plays an important role in achieving the main objective. For instance, they are directing the patient to the appropriate area or facility either in or next to the emergency department to meet their needs. Approximately, 15–40% of all cases treated in the emergency departments can be managed and treated in primary healthcare <sup>(19)</sup>.

In Saudi Arabia, it is not far from international estimates; around 42.2% of the patients who attended emergency departments (EDs) classify as level-V (non-urgent) depending on the Canadian Triage and Acuity Scale (CTAS) guidelines; however, 16.8% of patients were redirect to Primary Health Centre (PHC) <sup>(20)</sup>. There are different reasons for non-urgent patients for visiting EDs in Saudi hospitals including lack of services and healthcare providers in primary care, availability of services in EDs and fast access for all patients, and patients' thoughts regarding to receive the best care in EDs <sup>(21)</sup>. These factors affect the rate of visiting EDs which leads to overcrowding. Moreover, they may cause delays in providing the best quality of care for patients. As a result, increasing waiting time and overcrowding in EDs and decreasing the quality of care for patients who really need to

be treated in EDs are major consequences of attending EDs for non-urgent patients <sup>(22)</sup>. Consequently, applying the streaming pathways will simplify patient service and improve the overall outcomes.

From another point of view, referral letters written by PCPs are of variable quality and occasionally lack essential information <sup>(23)</sup>; EDs' written reports are sometimes sent to PCPs only months later, with some reports even sent to inaccurate addresses <sup>(24)</sup>. Furthermore, shared patient records are underused, mainly because many physicians are untrained in using these systems or because of the additional administrative tasks required for enrolling patients and keeping their data updated on the platform <sup>(24)</sup>. These factors raise a significant challenge in terms of informational continuity for patients between the emergency physician and their PCP. Informational continuity refers to 'how well a patient's health information is able to "travel" with him/her throughout the health services system, including over time, with the same practitioner and between practitioners in different settings' <sup>(25)</sup>.

In addition to informational continuity, two other types of continuity have been described in the literature. First, relational or interpersonal continuity appears in 'the ongoing relationship between the patient and her/his family and the care provider' <sup>(25)</sup>. Second, management continuity ensures that care received from different providers is connected in a coherent way <sup>(26)</sup>. These three types of continuity should be examined simultaneously since they are shown to be inter-related <sup>(27)</sup>. Timely electronic communication of ED records to PCPs has the potential to reduce unnecessary duplication of tests and referrals, reduce gaps in COC, improve patient and family perceptions of COC, enhance 'circle of care' relationships between hospital-based and community physicians <sup>(16)</sup>, and prevent patient feelings of loneliness when receiving different opinions <sup>(27)</sup>.

Several reports support the idea that experiences of continuity in healthcare must be viewed from the patient's perspective, where the patient can provide a global picture of his care experiences along the continuum of care <sup>(27, 28)</sup>. Moreover, the value of COC differs for various patients at different times and for different problems <sup>(29)</sup>. It is relevant therefore to assess the achievement of continuity from the patient's perspective. To our knowledge, COC across primary care and EDs from the perspective of users has not been studied. The aim of this study was to assess patients' perceptions of COC across primary care and EDs in KSA. Also, this study aimed to identify individual and contextual factors that influence this perception.

## Methods

A Cross-sectional study design was conducted in five emergency departments in KSA. Participants 501 adult patients referred to the ED by their primary care physician (PCP). Patients with cognitive impairment or in critical condition were excluded. The continuity of care across levels of care (CCAENA) is a useful instrument that measures patient-experienced COC as a multidimensional concept, regardless of morbidity and across multiple care settings <sup>(30)</sup>. This questionnaire, initially designed to assess the PCP–specialist interaction, using a Delphi expert consensus method <sup>(31)</sup>. Researchers started by following the translation and back-translation procedure. Second, replaced 'specialist' by 'emergency physician' in all items and invited ten experts (5 PCPs and 5 emergency physicians) to review the modified items independently to assess content validity to confirm the relevance and representativeness of the items covering the domains of the concept that is being measured' <sup>(32)</sup>.

The process of Delphi expert consensus method ended with the third round, where a consensus was reached; the final questionnaire consisted of 30 items covering the three types of continuity using a Likert scale (always, often, rarely and never). In this final

version, only items related to accessibility between levels were fundamentally changed. Newly added items investigated the waiting time in the ED, the financial barriers to care and whether the PCP informs the ED of the patient's arrival when necessary. Twelve additional questions covered general morbidity and socio-demographic data. The new questionnaire was pilot tested with a random sample of 25 patients referred to the ED by their PCP. No changes to the questionnaire were made after the pilot test.

The sample size calculated to achieve enough statistical power at a 95% confidence level was approximately 400 patients. Patients were recruited consecutively until a sample of 100 adult patients per ED, 501 patients in total, was reached. Inclusion criteria were patients above 18 years old; referral to the ED by their PCP through a referral letter, phone call or both (this criterion excludes patients who are not registered with a regular PCP). Excluded patients were those with cognitive impairment and those in the ED critical care zone.

Data were collected from January to June 2023. The researchers explained the objectives and nature of the study and gave patients an informational letter. Those who accepted to participate completed the paper questionnaire. SPSS Version .28 was used to analyze the data. Descriptive statistics of individual socio-demographic variables were calculated for each hospital and for the total sample. Each item was dichotomized (always and often vs. rarely and never). For each item, the proportion of patients who perceived a low level of COC was presented across the different categories of socio-demographic variables and hospitals.

A  $\chi^2$  test was used for the comparison of the proportion of patients who perceived a low level of COC. When the  $\chi^2$  was significant, a pairwise comparison between pairs of proportions using the Holm method was computed to determine which categories were significantly different. For the total score of each type of continuity, since the continuous variables did not follow a normal distribution, the median and its interquartile space were presented. Continuous variables were compared between two groups using the Mann-Witney test and between more than two groups using the Kruskal-Wallis test. When the Kruskal-Wallis test was significant, a pairwise comparison using the Mann-Witney test with the Holm method was computed to determine which categories were significantly different. As for the comparison between hospitals, a multilevel analysis was performed to test confounding factors (socio-demographic variables). None explained the variability between hospitals.

## Results

A total of 501 patients completed the questionnaire. Only 14 patients declined, which represents a response rate of 97.2%.

**Table (1)** shows socio-demographic and morbidity characteristics of all participants, as well as their distribution between EDs. The total sample is homogenous in terms of gender and morbidity. Almost 20% of patients are aged above 80 years old. The mean age was 59.5 years and the SD was 20.8. Patients with a low education level (primary and secondary levels) represent 64% of the total sample, while only 34% have a university or a non-university higher education level (high level).

**Table (2)** shows patients perceived high levels of all types of COC, almost 80% of patients had an overall high to very high perception of COC. However, significant differences were observed in relation to some individual characteristics, namely, morbidity, education level and age. Given the overall perceptions of high COC, we chose to present the characteristics of patients who perceived lower levels of COC. We present these results in table 3.

**Table (3)** shows patients suffering from chronic diseases perceived a lower level

of informational and management continuity on several items. For instance, 25% declared their PCP does not discuss their visits to the ED with them, and 50% thought that their PCP does not inform the emergency physician of their arrival to the ED, when necessary. Patients with a high level of education also perceived a lower level of informational and management continuity on several items. For instance, 40.5% thought that their healthcare providers do not know their medical history, and almost 15% were less likely to believe that the emergency physician agrees with the instructions of their PCP. Younger people were also more likely to perceive a lower level of informational and management continuity. For instance, 28.6% believed their PCP is not aware of the instructions given to them by the emergency physician; also, 49.4% declared that their PCP does not inform the emergency physician of their arrival to the ED.

For these three groups, the overall perception of informational and management continuity (care coherence) scores was significantly lower. In addition, more than 50% of patients, regardless of individual characteristics, perceived low levels of care coherence related to redundant medical investigations. Finally, a high degree of accessibility between levels of care was noted, with no significant differences between groups. Patients agreed that they do not have to wait a long time to be seen and cared for, at both healthcare levels. No significant differences were observed in regard to sex, profession or self-related health status. There was an overall perception of high levels of relational continuity with PCPs and emergency physicians, although relational continuity with emergency physicians had slightly lower scores.

**Table (4)** shows patients' perceptions of COC in relation to organizational characteristics significant differences were also observed in relation to organizational characteristics. In general, patients from five emergency departments had a lower perception of informational and management continuity compared with other. For instance, patients from ED 4 and ED 5 were less likely to believe that their PCP is aware of the emergency physician's instructions, compared with 14% in the rural area. Moreover, around 50% of patients from both EDs thought that their PCP and the emergency physician do not communicate with each other, compared with significantly lower percentages in other. Also, overall perception of informational and management continuity (accessibility between levels) was significantly lower compared with rural areas.

In parallel, almost 77% of patients from rural areas had a significantly lower perception of care coherence related to redundant medical investigations, compared with those from the two EDs in urban (55.2% and 51.5%). In addition, we observed significantly lower scores for ED 3 in terms of relational continuity with the emergency physician, where a high percentage of patients (1) did not feel comfortable discussing their doubts and health problems with the emergency physician, (2) were less likely to believe that the emergency physician cares about them and (3) were less likely to believe that the given information was sufficient. Almost all patients perceived very high levels of relational continuity with PCPs, with no differences observed between EDs.

**Table (1):** Characteristics of participants and their distribution between EDs

Characteristic	Category	ED 1 (n=100)	ED 2 (n=100)	ED 3 (n=101)	ED 4 (n=100)	ED 5 (n=100)	Total (N=501)
		n	n	n	n	n	n (%)
Gender	Male	45	55	34	43	38	215 (42.9)
	Female	55	45	67	57	62	286 (57.1)

Characteristics	Category	ED 1 (n=100)	ED 2 (n=100)	ED 3 (n=101)	ED 4 (n=100)	ED 5 (n=100)	Total (N=501)
		n	n	n	n	n	n (%)
Morbidity	Chronic disease	33	34	65	47	56	235 (46.9)
	Acute illness	67	60	36	53	44	259 (51.7)
	Missing	0	6	0	0	0	7 (1.4)
Age	18-64	76	53	35	62	50	276 (55.1)
	65-79	18	24	25	20	33	120 (24)
	80+	6	23	40	17	16	102 (20.4)
	Missing	0	0	1	1	1	3 (0.6)
Profession	Student	3	3	9	3	2	20 (4)
	Active	54	45	48	24	26	197 (39.3)
	Retired	26	45	36	58	54	219 (43.7)
	Unemployed	17	5	8	3	18	51 (10.2)
	Missing	0	2	0	12	0	14 (2.8)
Education level	Low	69	51	56	76	68	320 (63.9)
	High	31	43	45	20	32	171 (34.1)
	Missing	0	6	0	4	0	10 (2)
Self-related health	Very poor	1	1	6	3	8	19 (3.8)
status	Poor	8	12	27	19	16	82 (16.4)
	Fair	43	33	38	31	32	177 (35.3)
	Good	41	45	26	29	35	176 (35.1)
	Very good	7	8	4	18	9	46 (9.2)
	Missing	0	1	0	0	0	1 (0.2)

Table (2): Participants’ perceptions of COC

	Perception					
	Very low		High	Very high		
	Low		‘I don’t know’			
	%	CI	CI	CI	%	CI
	%		%		%	
Informational continuity	8.8	6.3 to 11.2	12.4 to 15.6	26.2 to 30.2	38.9	34.7 to 43.2
Management continuity						
Care coherence	7.9	5.5 to 10.2	8.6 to 11.3	31 to 35.2	33.5	29.3 to 37.6
Accessibility between levels	12.2	9.4 to 15.1	7.3 to 9.9	23.5 to 27.5	42.7	38.3 to 47
Relational continuity						

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Patient-PCP relationship	1.4 4.5	0.4 to 2.4	2.7 to 6.3 22.7	19 to 26.4	70.5 0.9	66.5 to 74.5 0.1 to 1.8
Patient-emergency physician relationship	2.2 11	0.9 to 3.5	8.2 to 13.7 39.5	35.2 to 43.8	43.9 3.4	39.5 to 48.2 1.8 to 5
Overall COC	5.5 9.8	3.5 to 7.5	7.2 to 12.4 31.2	27.1 to 35.2	47.7 5.8	43.3 to 52.1 3.7 to 7.8

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**Table (3):** Proportion of patients with low perceptions of COC in relation to individual factors (N=501)

		Age (years)			Educational level			Morbidity			
		18–64	65–79	>80	P value	Low	High	P value	Chronic disease	Acute illness	P value
Informational continuity	I believe that the professionals attending to me know my medical history.	36.7	26.7	17.7	0.001	25.3	40.5	<0001	35.7	24.6	0.010
	After being to the ED, my PCP discusses the visit with me.	23.1	16.9	16.8	NS	17.7	26.7	0.030	24.8	16	0.022
	My PCP is aware of the instructions given to me by the EP (...)	28.6	24.5	12.8	0.013	22.8	27.5	NS	26.3	22.3	NS
	The EP is aware of the instructions given to me by my PCP (...)	33.9	23.3	21.1	0.021	25.6	35.1	0.045	32.2	25.2	NS
Overall informational continuity, median (P25–P75)		12 (10–14)	13 (11–15)	14 (12–15)	<0.001				13 (11–15)	12 (9–14)	0.002
Care coherence	My PCP agrees with the instructions of the EP.		9.4	8.5	0	0.016	5.5	10.4	NS	10.4	3.90.013
	The EP agrees with the instruction given to me by my PCP.	11.2	9.1	7.9	NS	7.9	14.4	0.046	10.9	9.2	NS
	The EP repeats the tests which my PCP has already done: (...)	66.9	58	50	0.011	58.6	66.0	NS	64.3	57.9	NS
Overall management continuity: care coherence, median (P25–P75)			21 (19–23)	22 (20–24)	23 (21–25)	<0.001	22 (20–24)	21 (19–23)	0,007	21 (19–23)	22 (20–24)
Accessibility	My PCP informs the EP of my arrival to the ED if necessary.	49.4	38	35.2	0.026	42.1	45.8	NS	49.8	36.7	0.008
	Overall management continuity: accessibility between levels, median(P25–P75)	12 (11–14)	13 (11–14)	13 (11–14)	NS	13 (11–14)	12 (11–13)	NS	12 (11–13)	13 (11–14)	NS



indicates proportions that are significantly lower



indicates proportions that are significantly higher;

(...) means question continued. COC, continuity of care; ED, emergency department; EP, emergency physician; NS, not significant; PCP, primary care physician.



**Table (4):** Proportion of patients with low perceptions of COC in relation to organizational factors

		<b>Patients with low perception of COC per hospital/ED</b>					<b>Total n=501</b>	<b>P value</b>
		<b>ED 1 n=100</b>	<b>ED 2 n=100</b>	<b>ED 3 n=101</b>	<b>ED 4 n=100</b>	<b>ED 5 n=100</b>		
Informational	After being to the ED, my PCP discusses the visit with me.	21.4	19.8	6.9	32	22	20.4	<0001
	My PCP is aware of the instructions given to me by the EP (...)	14	20	14.5	35.8	35	24.5	<0001
	The EP is aware of the instructions given to me by my PCP (...)	14.1	24.7	29.4	43.3	30.6	28.7	<0001
	Overall informational continuity, median (P25–P75)	12 (11–15)	13 (12–15)	14 (12–15)	12 (9–14)	12 (10–14)	13 (10–15)	<0001
Care coherence	My PCP and the EP communicate with each other concerning my case.	17.7	25.5	37.3	47.5	51.2	36.3	<0001
	The EP agrees with the instructions given to me by my PCP.	11.2	5	9.5	20.7	4.1	10.2	0.001
	The EP repeats the tests which my PCP has already done (...)	76.8	61	63	55.2	51.5	61.4	0.004
	The EP gives me the first treatment that he has prescribed to me.	5.4	11.6	16.1	11.3	20.6	13.1	0.029
	Overall management continuity: care coherence, median (P25–P75) (20–23)	21	22 (21–24)	22 (19–24)	22 (19–24)	21 (20–23)	22 (20–24)	NS
Accessibility	My PCP informs the EP of my arrival to the ED if necessary.	28.2	40.5	36.3	55.3	55.2	43.6	<0.001
	Overall management continuity: accessibility between levels median (P25–P75)	13 (12–14)	13 (11–14)	12 (11–14)	12 (10–13)	12 (11–13)	12 (11–14)	<0.001
Relational continuity	I believe that the EP cares about me.	7.1	9.8	23.3	17.5	11	13.6	0.008
	I feel comfortable consulting the EP about my doubts or Health problems.	11.3	16.8	44.3	21.4	15	21.8	<0.001
	The information the EP gives me is sufficient.	13.3	8.5	27.3	17	16	16.5	0.009
	Overall relational continuity: patient–EP relationship, median (P25–P75)	23 (20–27)	24 (21–28)	23 (21–27)	21 (18–24)	23 (20–27)	25 (21–28)	<0.001

indicates proportions that  
are significantly lower



indicates proportions that are significantly higher;

(...) means question continued. COC, continuity of care; ED, emergency department; EP, emergency physician; NS, not significant; PCP, primary care physician.

## Discussion

The present results showed an overall perception of high COC for the three types of continuity. However, when examining specific attributes of informational and management continuity, we were able to identify significant differences related to individual factors. Patients suffering from chronic diseases perceived lower levels of informational and management continuity for certain attributes. Yet, COC becomes increasingly important for patients with comorbidities and complex problems who are under the care of several healthcare providers at various points in time<sup>(33-35)</sup>. For these patients, gaps in informational continuity are common and result in poor management continuity. For example, informational discontinuity following hospital discharge leads to disrupted or delayed care, delays in medication prescriptions, and confusion and dissatisfaction among patients<sup>(36)</sup>.

Patients who are more educated are shown to have higher expectations, to judge quality more critically and to elicit more information<sup>(37, 38)</sup>. Our results also suggest that these patients are more likely to think that the emergency physician is not aware of the instructions given by their PCP. This is at odds with the fact that all participants were referred to the ED by their PCP. Again, this highlights the controverted quality and incompleteness of some referral letters. Patients' perception of older than 80 years showed higher levels of informational and management continuity on almost every item. Particularly, they were more likely to believe that, if necessary, their PCP informs the emergency physician of their arrival to the ED. Indeed, PCPs prefer to use this direct approach because it allows a direct interaction and case discussion between healthcare providers and helps to reduce waiting time for the elderly in the ED.

At the same time, older people are shown to express greater satisfaction with the care received and have more realistic expectations<sup>(39)</sup>. They also have a better knowledge of the system due to more frequent use of healthcare services<sup>(37)</sup>. Most patients perceived a high degree of accessibility between levels of care related to minimal waiting times to be seen and cared for in both levels. Regarding relational continuity, all patients perceived high levels with their PCPs, which could be because our sample includes patients who are registered with a regular PCP. Indeed, seeing the same PCP each time was described as a factor for fostering trust between the patient and their PCP, accumulating mutual knowledge of each other and developing a relational COC<sup>(40)</sup>.

On the other hand, hospital-based systems of care traditionally give lower priority to relational continuity. In these contexts, COC becomes the result of a patient's trust in 'their' hospital or ED, the quality of teamwork observed and the degree of coordination with their PCP<sup>(36)</sup>. This was probably the case for our participants who all perceived a high level of relational continuity with their emergency physician. On an organizational level, our results shed light on three structural factors that hinder COC. First, ED activities are three times more elevated than those in rural areas. In a previous study, actors from both levels of care have identified this workload as a major factor hindering communication and coordination between them<sup>(24)</sup>. It has long been recognized that increasing access to general practitioners would decrease use of emergency services<sup>(41-43)</sup> and that stronger primary care (in terms of accessibility, comprehensiveness and continuity) would lead to improved population health and lower health-care service use<sup>(44)</sup>.

Reinforcing primary care is becoming ever more relevant, given the current shifts towards community-based care and early hospital discharge. Furthermore, the ageing population and the increase in comorbid chronic diseases<sup>(45-48)</sup> are expected to put further strain on primary care. Given these trends, relevant recommendations include enhancing the recruitment and retention of PCPs<sup>(49, 50)</sup>, developing general practice cooperatives outside normal working hours<sup>(51)</sup>, improving availability of diagnostic facilities, and enhancing coordination within primary care and across levels by providing financial incentives<sup>(50)</sup>. Second, the limitations of information sharing systems and communication

issues between the two levels of care could explain the high perception of redundant medical investigations reported in our study. Again, this hints at the influence of informational continuity on management continuity, especially with increasing geographical distances.

Finally, the study exploring collaborations between ED teams and PCPs as our project showed that in (ED 3), competition between hospitals is intense because of proximity. Thus, PCPs hold the economic power as they are the ‘patient providers’. Consequently, collaboration suffers; emergency physicians consider PCPs to exert their monopoly through the advantaged relationship with patients. This suggests that patients having more trust and satisfaction with their PCPs than in the ED may be symptomatic of this poor coordination between the two levels of care. Thus, there is a need for rethinking the current payment system (of both levels) that encourages competition and hinders coordination. Overall, our study identifies the many factors, both individual and organizational, that shape patients’ perception of COC. We already know that three types of COC are interrelated and constitute a whole. However, it is unknown whether one or many factors have more influence than others on a patient’s care experience, and there is no easy way of assessing this potential classification. Improving service delivery might not be enough to improve patients’ perception of COC if not combined with a patient-centered care approach on a clinical, individual level.

### **Conclusion**

This study confirms the interrelation of the three types of COC. Informational discontinuity is related to redundant medical investigations and inefficiencies in providing care. In turn, high levels of relational continuity with the PCP may influence management continuity and patient perceptions of high accessibility to PCPs. In addition, communication and collaboration issues between healthcare providers from both levels of care can influence the relational continuity with PCPs and emergency physicians. On an individual level, a more enhanced patient-centered approach could be beneficial in improving patient experiences of care, in particular, those who are younger, highly educated and with chronic illness. As for healthcare services, while patients report high satisfaction and ease of accessibility, efforts need to be directed towards improving system efficiency. Finally, this study reinforces the need for a stronger primary care level to improve the patient care experience, but also to benefit the healthcare system by reducing overuse of emergency services.

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