Optimization of the Prehospital Model to Improve the Quality of Care in Patients Transferred between Hospitals

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Abstract

The objective was evaluate the effectiveness of the management of a prehospital model in improving the quality of care for interhospital patients, Metropolitan Lima-2023. Material and Methods: Retrospective observational study. It used secondary data from the national emergency and emergency center. In the population, 4,500 data from patients seen in the month of August 2023 and the sample of 354 patients seen in the month of August 2023 were considered, selected in a simple random manner. The technique was a documentary review of the data provided by the health center. Results. Conclusion: the management of the hospital model is significantly associated with the basic priority in the quality of care and with the conclusion of the quality of care; However, it is not associated with the response time of the quality of care.

Keywords: *Management, Development Model, Hospital, Quality of Life.*

INTRODUCTION

An adequate health system and high-quality pre-hospital care are essential for people's well-being. However, social, economic and ecological factors have a significant impact on health. It is estimated that each year more than 100 billion people are injured worldwide, and 5 million die from injuries. Consequently, the global death rate from violence and injuries stands at 90 in low- and middle-income countries. Given these data, the World Health Organization urges States to establish functional organizations for care and interhospital transfers (World Health Organization [WHO], 2020).

In Colombia, health personnel who perform prehospital work face a variety of complex and uncontrolled situations and scenarios, which entail different risks. These risks are biological, biomechanical, psychosocial, physical, and exposure to physical and verbal violence increases the likelihood of workplace accidents and illnesses, often with serious consequences. Each situation presents unique challenges depending on clinical status, patient needs, and event location. Therefore, it is essential to design strategies to improve the health and well-being of these workers, which will contribute to improving quality and strengthening health systems in the prehospital setting.

In Peru, the implementation of the health insurance policy has achieved significant progress; However, timely access and satisfaction of the health needs of a large part of the population remain insufficient. The National Health Superintendence has contributed to this process by focusing on sanctioning non-compliance by system actors. Furthermore, to avoid conflicts with the public health system, it is essential to improve aspects related to human resources, infrastructure, equipment and quality control in services (Cabezas, 2019).

The general objective was to establish the association of the Prehospital model and the Quality of Care in patients transferred between hospitals.

In optimizing the prehospital model, regulations must be prioritized for proper functioning of the prehospital and compliance with them must be monitored as relevant components of the Emergency care cycle at different levels (León et al (2019). Interhospital transfers between care units Intensive care is on the rise and has been analyzed mainly from the point of view of patient safety. These transfers can be perceived as an involuntary journey for the patient, making the transfer of vulnerable patients a complex task. of health personnel to maintain an adequate care environment throughout the process (Karlsson et al., 2019).

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METHODOLOGY

The type of research was applied (Concytec, 2018), whose purpose is to evaluate Optimization of the Prehospital Model to Improve the Quality of Care in Patients Transferred between Hospitals. Regarding the methodological approach, the quantitative approach has been selected, which, according to Hernández and Mendoza (2018) indicated that it is related to the measurement of quantities based on a specific phenomenon. The research design adopted was a retrospective analytical observational design, since the observation and study of the variables was carried out as they are presented in the real context, without intervening in them (Hernández and Mendoza, 2018).

The population for the present study considered **4500** data from patients seen during the month of August 2023. The inclusion criteria were: Data collected in a period of one month from patients seen in August 2023 were included. Adult patients seen by emergency. Male and female patients were included. Patients with various diagnoses were included. The Exclusion Criteria, data from the other months of the period of 2023 were excluded. Minor patients were excluded. The sample for the present study was **354** patients seen in the month of August 2023, selected in a simple random manner. The sample constituted the portion of the population that was chosen and from which the necessary information was obtained to carry out the investigation and the sampling was simple random probabilistic.

Data collection techniques and instruments are a set of processes whose objective was to collect data using one or several instruments with a specific purpose (Sánchez, 2019). However, for the present study the validity of instruments was not carried out since the database has been compiled by the institution and said collected data were processed. Furthermore, the reliability of the instruments was not carried out, since the database has been compiled by the institution and said collected data were processed.

RESULTS

Table 1 Description of the age and condition dimensions of the prehospital model and the response time of the quality of care

Age			Response time		Total
			<= 20,00	21,00 - 30,00	
< 30 years	Prehospital Model Condition	Appointment	6	2	8
			17,6%	5,9%	23,5%
		Evaluation of the insured	9	1	10
			26,5%	2,9%	29,4%
		Padomi Review	2	0	2
			5,9%	0,0%	5,9%
		Air entry	0	2	2
			0,0%	5,9%	5,9%
		Transfer	6	4	10
			17,6%	11,8%	29,4%
		Procedure	2	0	2
			5,9%	0,0%	5,9%
	Result		25	9	34
			73,5%	26,5%	100,0%
De 31 a 45 years	Prehospital Model Condition	Appointment	4	4	8
			11,1%	11,1%	22,2%
		Evaluation of the insured	8	5	13
			22,2%	13,9%	36,1%
		Padomi Review	1	0	1
			2,8%	0,0%	2,8%
		Air entry	1	0	1
			2,8%	0,0%	2,8%
		Return	4	0	4
			11,1%	0,0%	11,1%
		Transfer	4	5	9
			11,1%	13,9%	25,0%
	Result		22	14	36
			61,1%	38,9%	100,0%
De 46 a 60 years	Prehospital Model Condition	Appointment	5	2	7
			12,2%	4,9%	17,1%

		Evaluation of the insured	6	5	11
			14,6%	12,2%	26,8%
		Padomi Review	0	1	1
			0,0%	2,4%	2,4%
		Air entry	1	0	1
			2,4%	0,0%	2,4%
		Return	2	2	4
			4,9%	4,9%	9,8%
		Transfer	10	5	15
			24,4%	12,2%	36,6%
		Procedure	0	2	2
			0,0%	4,9%	4,9%
	Result		24	17	41
			58,5%	41,5%	100,0%
> de 60 years	Prehospital Model Condition	Appointment	30	6	36
			12,5%	2,5%	15,0%
		Evaluation of the insured	41	14	55
			17,1%	5,8%	22,9%
		Padomi Review	55	26	81
			22,9%	10,8%	33,8%
		Air entry	8	2	10
			3,3%	0,8%	4,2%
		Return	10	5	15
			4,2%	2,1%	6,3%
		Transfer	25	10	35
			10,4%	4,2%	14,6%
		Procedure	8	0	8
			3,3%	0,0%	3,3%
	Result		177	63	240
			73,8%	26,3%	100,0%
Total	Prehospital Model Condition	Appointment	45	14	59
			12,8%	4,0%	16,8%
		Evaluation of the insured	64	25	89
			18,2%	7,1%	25,4%
		Padomi Review	58	27	85
			16,5%	7,7%	24,2%
		Air entry	10	4	14
			2,8%	1,1%	4,0%
		Return	16	7	23
			4,6%	2,0%	6,6%
		Transfer	45	24	69
			12,8%	6,8%	19,7%
		Procedure	10	2	12
			2,8%	0,6%	3,4%
	Result		248	103	351
			70,7%	29,3%	100,0%

In table 1, it was found that the dimensions of the age and condition of the hospital model and the response time of the quality of care, in the patients from 30 to younger in the condition mentioned, 17.6% were treated from 20 to fewer minutes and 5.9% presented 21 to 30 minutes of response time; In the insured evaluation condition, 26.5% were attended to in 20 to less minutes and 2.9% had a response time of 21 to 30 minutes; In the air entry condition, 5.9% were treated for 20 to 30 minutes; In the transfer condition, 17.6% were attended to in 20 to less minutes and 11.8% had a response time of 21 to 30 minutes; In the procedure condition, 5.9% were treated for 20 to less minutes. In patients aged 31 to 45 years, in the mentioned condition, 11.1% were attended to in 20 to less minutes and 11.1% had a response time of 21 to 30 minutes; In the air entry condition, 2.8% were treated for 20 to less minutes; In the return condition, 11.1% were attended for 20 to less minutes; In the transfer condition, 11.1% were attended to in 20 to less minutes and 13.9% had a response time of 21 to 30 minutes. In patients aged 46 to 60 years in the mentioned condition, 12.2% were attended to in 20 to less minutes and 4.9% had a response time of 21 to 30 minutes; In the meeting and evaluation of the insured, 14.6% were attended to in 20 to less minutes and 12.2% had a response time of 21 to 30 minutes; In air entry, 2.4% were attended for 20 minutes or less; In the return condition, 4.9% were attended to in 20 to less minutes and

4.9% had a response time of 21 to 30 minutes; In the transfer condition, 24.4% were attended to in 20 to less minutes and 12.2% had a response time of 21 to 30 minutes.

Table 2*Association between management of a prehospital model in improving the quality of care for interhospital patients, Lima-2023*

Management of a prehospital model	Attention quality	Statisticians		
		Chi2	gl	p
Hospital model condition	Care Base Priority	98,395ª	18	0.000
	Response time	3,137ª	6	0.402
	Conclusion of attention	250,938ª	24	0.000

In Table 2, the non-parametric Pearson Chi square test was performed and it was found that the conditions of the prehospital model present a significant association with the base priority with Chi2 = 98.395ª and p = 0.00; Likewise, it was found that the hospital model condition is associated with the conclusion of care of the care received with Chi2 = 250.938ª and p = 0.000. However, it was found that the hospital model condition is not associated with the response time of the care received with Chi2 = 3.137ª and p = 0.402; being greater than p>0.05, so the alternative hypothesis is not accepted in this case.

DISCUSSION AND CONCLUSION

The conditions of the prehospital model present a significant association with the base priority with Chi2 = 98.395ª and p = 0.00; Likewise, it was found that the hospital model condition is associated with the conclusion of care of the care received with Chi2 = 250.938ª and p = 0.000. However, it was found that the hospital model condition is not associated with the response time of the care received with Chi2 = 3.137ª and p = 0.402; being greater than p>0.05, so the alternative hypothesis is not accepted in this case.

Being similar to the study by Ndebwanimana et al. (2023) found that the treatment of seriously ill patients is often complicated by prolonged or complex transfers between hospitals. Difficulties or inefficiency in these transfers can lead to poor patient outcomes. On-call triage systems have been used to facilitate communication between facilities and avoid poor outcomes associated with patient transfer. Results during the intervention of the doctor on call, the indication for transfer was significantly more likely to be for critical care ($P < 0.001$), transfer times were faster ($P < 0.001$), patients were more likely to show emergency . Vital signs ($P < 0.001$) and vital signs were more likely to be collected before transport ($P < 0.001$) compared to the preintervention phase. Concluding that Emergency Medicine intervention was associated with better timely interhospital transfer and clinical documentation.

To guarantee the effectiveness of the management of the prehospital model to improve the quality of care for interhospital patients Chih et al. (2021) identified that periodic feedback on interhospital patient transfer improves the quality of patient care. After adjusting for confounders, the feedback group was associated with a higher rate of blood transfusion before transfer. In the conditions of the management of the prehospital model, it is established in the appointments generated, the evaluations of the insured, the Padomi valuation, air admissions, the return of the patient, the transfer of the patient and the procedures that are carried out as part of the protocol (ESSALUD , 2023). Pre-hospital care systems reveal a diversity of approaches to the provision of emergency services around the world, with planning, development and supervision falling to a country's central authority, such as the Ministry of Health. This allows for nationwide coordination and standardization of prehospital care.

CONCLUSION

In accordance with the general objective, it was found that the management of the hospital model is significantly associated with the basic priority in the quality of care and with the conclusion of the quality of care; However, it is not associated with the response time of the quality of care. Furthermore, the conditions of the prehospital model are associated with the basic priority of quality of care; with model management and base priority at

moderate levels. Finally, the condition of the hospital model is not associated with the response time of the care received; with model management and response time at moderate levels.

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