

Immediate Care Office as a quality management strategy at the Emergency Service of a hospital in Lima, Peru

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ABSTRACT

Objective: To determine the effectiveness of the implementation of the Immediate Care Office as a quality management strategy at the Emergency Service of a public hospital in Lima, Peru.

Materials and methods: An analytical, quasi-experimental, before-and-after study conducted with 338 outpatients from different groups treated at the Emergency Service of Hospital María Auxiliadora. Before and after the implementation of the Immediate Care Office, waiting time, satisfaction—assessed through the modified SERVQUAL questionnaire, which was validated and recommended by the Ministry of Health and administered to the postimplementation group—as well as the relationship between satisfaction and waiting time were evaluated. The analysis was performed using IBM SPSS statistics V25.0, frequencies and percentages, the mean difference of both groups obtained through the Levene's test, and the nonparametric measurement of the Spearman's correlation coefficient with a significance level of $p < 0.05$.

Results: The results showed a predominance of the female sex (60.95 %), the 14-to-29-year age range (24.56 %) and the Emergency Severity Index level IV (67.16 %). The average waiting time accounted for 17.70 and 4.27 before and after the office implementation, respectively. Therefore, there was a significant difference after the management strategy ($p < 0.00$). Out of all outpatients, 56.21 % were satisfied with the implementation of the Immediate Care Office, mainly with the empathy (76.33 %) and responsiveness (69.23 %) dimensions, while reliability was the dimension with the lowest satisfaction score (48.52 %). Additionally, there was a significant inverse correlation between waiting time and satisfaction ($p < 0.01$ and $\rho: -0.39$).

Conclusions: The implementation of the Immediate Care Office at the Emergency Service was effective since it reduced the waiting time, which in turn brought satisfaction to the outpatients.

Keywords: Health Management; Quality of Health Care; Patient Satisfaction; Emergency Medical Services; Sanitary Management (Source: MeSH NLM).

Consultorio de Atención Inmediata como estrategia de gestión de calidad en el Servicio de Emergencia de un hospital de Lima, Perú

RESUMEN

Objetivo: Determinar la eficacia de la implementación del Consultorio de Atención Inmediata como estrategia de gestión de calidad en el Servicio de Emergencia de un hospital público de Lima, Perú.

Materiales y métodos: Estudio analítico, cuasi experimental de antes y después, con grupos diferentes, que se realizó en 338 usuarios externos atendidos en el Servicio de Emergencia del Hospital María Auxiliadora. Se evaluó el tiempo de espera antes y después de la implementación del Consultorio de Atención Inmediata, así como la satisfacción a través del cuestionario SERVQUAL modificado —validado y recomendado por el Ministerio de Salud (Minsa) y aplicado en el grupo de posimplementación—, además de su relación con el tiempo de espera obtenido. El análisis se realizó a través del *software* de IBM SPSS S25.0 mediante medidas de frecuencias y porcentajes, diferencia de medias en grupos distintos con el test de Levene y la medida no paramétrica del coeficiente de correlación de Spearman con un nivel de significancia $p < 0,05$.

Resultados: Los resultados mostraron predominio del sexo femenino (60,95 %), en el rango de edad de 14 a 29 años (24,56 %), en la prioridad IV (67,16 %); el tiempo de espera para la atención tuvo una media de 17,70 previo a la implementación y una media de 4,27 posterior a esta, por lo tanto, hubo una diferencia significativa después de la

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estrategia de gestión ($p < 0,00$). La satisfacción del Consultorio de Atención Inmediata se obtuvo en el 56,21 % de los usuarios externos, con énfasis en la dimensión empatía (76,33 %) y capacidad de respuesta (69,23 %), mientras que la dimensión con menor satisfacción fue la fiabilidad (48,52 %), además de obtener una correlación significativa inversa entre el tiempo de espera y la satisfacción ($p < 0,01$ y $\rho: -0,39$).

Conclusiones: La implementación del Consultorio de Atención Inmediata en el Servicio de Emergencia fue eficaz; en consecuencia, el tiempo de espera disminuyó, lo cual, a su vez, generó satisfacción en el usuario externo.

Palabras clave: Gestión en Salud; Calidad de la Atención de Salud; Satisfacción del Paciente; Servicios Médicos de Urgencia; Administración Sanitaria (Fuente: DeCS BIREME).

INTRODUCTION

The Emergency Department is designed for the care of outpatients at risk of immediate complications or death. Therefore, most of the care required in public hospitals is provided and funded, in whole or in part, by the State. However, for many years, this service has been characterized by a high user demand, which has affected the quality of care and, consequently, has led to the search for different management strategies. Such information shows the importance of a continuous analysis, given the persistence of deficiencies that are reflected in outpatient satisfaction ⁽¹⁾.

Regarding outpatients' high demand for health care in the Emergency Department, several causes whose clinical situation is not necessarily a serious one have been identified. Regardless of the cause, most of its consequences refer to a longer waiting time and dissatisfaction. Several studies evaluate admission, flow or discharge strategies to distinguish which one is appropriate to counteract this problem. One flow strategy is the implementation of an office in the Emergency Department aimed at providing medical care to outpatients with minor emergencies or priority levels III, IV and V, according to the Emergency Severity Index (ESI) ⁽²⁾.

A management strategy in search for the best quality of care must undergo a periodic evaluation that justifies, modifies or eliminates it, based on meeting the objectives of the health managers involved. At the international level, the implementation of an office for stable patients who highly demand medical care has been simulated in order to reduce the flow of outpatients ⁽³⁾. In addition, it has been pointed out that the creation of an office is one of the strategies to improve the quality of care in the emergency department of high-complexity health centers since it improved the waiting time and the flow of patients ⁽⁴⁾.

On the other hand, several studies show that there is a large gap between this problem in the quality of care and patient satisfaction ⁽⁵⁾. With the aim of optimizing medical care, in 2016, the Seguro Social de Salud del Perú (EsSalud, Social Health Insurance of Peru) implemented an immediate

care office in the emergency departments of its health care institutions ^(6,7). However, public hospitals have not yet implemented this type of office, with the exception of Hospital María Auxiliadora since 2021, so no related studies have been conducted. For this reason, this research aims to determine the effectiveness of the implementation of the Immediate Care Office as a new quality management strategy in the Emergency Department of a public hospital in Lima, Peru.

MATERIALS AND METHODS

Study design and population

This is an analytical, quasi-experimental study conducted before and after the implementation of a quality management strategy with different groups, whose care was classified as not serious and were treated at the Emergency Department of Hospital María Auxiliadora.

The unit of analysis were the outpatients with priority levels III, IV and V treated at the Emergency Department of Hospital María Auxiliadora. The population consisted of 2,708 outpatients and the sample size accounted for 338, according to a statistical formula, with a 95.00% confidence level and a margin of error of 5.00%. This random sample was divided into two groups: before (169 outpatients) and after (169 outpatients) the implementation of the Immediate Care Office.

The inclusion criteria included outpatients over 14 years of age who were classified as priority levels III, IV and V, and referred to the Internal Medicine area and the Immediate Care Office. Outpatients who were referred by the Triage Unit physician to other Emergency Department areas were excluded.

Variables and measurements

The before-and-after evaluation consisted in measuring the waiting time for medical care. For this purpose, the "before group," made up of 169 outpatients, had an examiner in charge of recording the time between the issuance of the emergency medical record and the medical care in the Internal Medicine area from July to September 2021. On the other hand, the "after group," also made up

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of 169 outpatients, had a secondary source: the shift report of the Immediate Care Office from August to October 2022.

The characteristics (sex, age range and priority level) of the 338 outpatients were collected using the emergency medical record in the “before group” and through the shift report in the “after group.”

The outpatient satisfaction of the Immediate Care Office was evaluated in the “after group” by administering the modified SERVQUAL questionnaire, which is validated and used by the Ministry of Health of Peru (MINSA) and has five dimensions of quality (reliability, responsiveness, safety, empathy and tangible aspects). Said dimensions were included in 22 items related to the outpatients’ perceptions and 22 to their expectations using a Likert scale (1 to 7), where 1 was extremely bad, 2 very bad, 3 bad, 4 fair, 5 good, 6 very good and 7 excellent. The results of the perceptions were subtracted from those of the expectations and the difference was considered as satisfaction if it was positive and dissatisfaction if it was negative.

With the support of an examiner previously trained to offer guidance, the modified SERVQUAL questionnaire was administered to 169 outpatients seen at the Immediate Care Office after signing an informed consent form and using a Likert scale. The score of the first item regarding waiting time satisfaction was considered to determine its relationship with the actual waiting time.

Statistical analysis

The information collected was exported to the Microsoft Excel 2021 program and the analysis was performed using IBM SPSS Statistics V25.0, frequencies and percentages, the mean difference of both groups obtained through the Levene’s test, and the nonparametric measurement of the Spearman’s correlation coefficient with a significance level of $p < 0.05$.

Ethical considerations

The present study was evaluated and approved by the Institutional Research Ethics Committee of Universidad Nacional Mayor de San Marcos and the Institutional Research Ethics Committee of Hospital María Auxiliadora following the respective protocol. Likewise, the confidentiality of the information was protected since the results were provided anonymously, and the principles of the Declaration of Helsinki were taken into consideration.

RESULTS

Characteristics of the Emergency Department outpatients

A total of 2,708 outpatients with priority levels III, IV and V were identified during the estimated study period, resulting in a sample of 338 outpatients with the following characteristics: 206 females (60.95 %), 83 people in the 14-to-29-year age range (24.56 %) and 227 people classified as priority level IV (67.16 %) (Table 1).

Table 1. Characteristics of outpatients with priority levels III, IV and V at the Emergency Department of Hospital María Auxiliadora

Characteristics	Number of visits (n)	Percentage (%)
Sex		
Male	132	39.05
Female	206	60.95
Total	338	100.00
Age range		
14 to 29 years	83	24.56
30 to 39 years	62	18.34
40 to 49 years	54	15.98
50 to 59 years	60	17.75
60 to 69 years	39	11.54
70 to 79 years	31	9.17
80 or more years	9	2.66
Total	338	100.00
Priority level		
Priority level III	88	26.04
Priority level IV	227	67.16
Priority level V	23	6.80
Total	338	100.00

Source: self-elaboration based on the medical records and shift report of the Emergency Department of Hospital María Auxiliadora.

Waiting time for medical care

The 338 outpatients with priority levels III, IV and V were divided into two groups of 169 outpatients each: one of them was evaluated before and the other one after the implementation of the quality management strategy related to the waiting time between admission and medical care. Among the before-evaluation group, 50 people mainly had a waiting time of 6 to 11 minutes (29.59 %). On the other hand, among the after-evaluation group, 138 people (81.66 %) mostly had a waiting time of 0 to 5 minutes (Table 2).

Table 2. Distribution of the waiting time for medical care of outpatients with priority levels III, IV and V at the Emergency Department

	Implementation of the management strategy			
	Before		After	
	Number of outpatients (n)	Percentage (%)	Number of outpatients (n)	Percentage (%)
Waiting time				
0 to 5 minutes	6	3.55	138	81.66
6 to 11 minutes	50	29.59	21	12.43
12 to 17 minutes	43	25.44	8	4.73
18 to 23 minutes	27	15.98	1	0.59
24 to 29 minutes	17	10.06	1	0.59
30 to 35 minutes	16	9.47		
36 to 41 minutes	9	5.33		
42 to 45 minutes	1	0.59		
Total	169	100.00	169	100.00

Source: self-elaboration based on the evaluation and shift report of the Emergency Department of Hospital María Auxiliadora.

The waiting time for medical care of outpatients with priority levels III, IV and V in the “before group” and the “after group” accounted for a mean of 17.70 and 4.27, respectively. Using the Levene’s test, these results were compared with a value of $p < 0.05$, rejecting the null hypothesis and accepting the alternative hypothesis, i.e., the waiting time of the “before group” and the “after group” were different (Table 3).

Table 3. Mean difference of the waiting time for medical care of outpatients with priority levels III, IV and V at the Emergency Department

	Implementation of the management strategy	
	Before	After
Mean	17.70	4.27
N	169	169
Deviation	9.65	3.63
Levene’s test (significance)	0.00	0.00

Source: self-elaboration based on the shift report of the Emergency Department of Hospital María Auxiliadora.

Satisfaction of the Immediate Care Office outpatients

Out of the 169 outpatients administered the modified SERVQUAL questionnaire, 95 (56.21 %) were satisfied while 74 (43.79 %) were dissatisfied with the care received. The dimension with the highest satisfaction score was empathy, with 129 people (76.33 %), and the dimension with the lowest satisfaction score was reliability, with 82 people (48.52 %) (Figure 1).

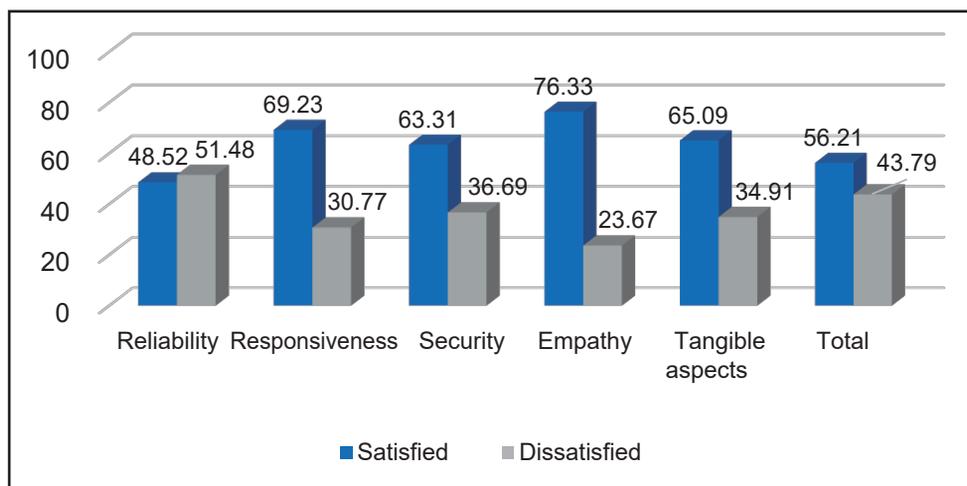


Figure 1. Satisfaction of outpatients of the Immediate Care Office according to the dimensions of quality

Source: self-elaboration based on the results of the modified SERVQUAL questionnaire administered to patients of the Immediate Care Office of Hospital María Auxiliadora.

Waiting time and outpatient satisfaction

Spearman's rho correlation coefficient showed a Sig. (2-tailed) value < 0.05 with 0.00, which indicates a relationship between both variables. In addition, a rho of -0.39 was identified, which adds an inverse relationship between them. In other words, the longer the waiting time for medical care, the lower the outpatient satisfaction (Table 4).

Table 4. Relationship between waiting time and outpatient satisfaction at the Immediate Care Office of Hospital María Auxiliadora

		Waiting time	Outpatient satisfaction
Waiting time	Correlation coefficient	1.00	-0.39**
	Sig. (2-tailed)		0.00
	N	169	169
Outpatient satisfaction	Correlation coefficient	-0.39**	1.00
	Sig. (2-tailed)	0.00	.
	N	169	169

** Correlation is significant at the 0.01 level (2-tailed).

Source: self-elaboration based on the results of the modified SERVQUAL questionnaire administered to outpatients of the Immediate Care Office of Hospital María Auxiliadora.

DISCUSSION

Two aspects that should be taken into account in the quality of care at the Emergency Department is waiting time and outpatient satisfaction, so their analysis is important for the choice of strategies. This agrees with a study on emergency and urgent care services, which points out that the improvement in the care of outpatients should be handled according to the problems identified in the health service ⁽⁸⁾.

The characteristics of the outpatients treated at the Emergency Department showed that the female sex prevailed. This result is similar to that of a study carried out in the emergency department of an EsSalud hospital, where females accounted for 51.61 % ⁽⁹⁾; a study conducted in Costa Rica on trends in the emergency department that revealed 54.91 % ⁽¹⁰⁾; a study focused on emergency department overcrowding, with 57.00 % ⁽¹¹⁾; and a study of the characteristics of non-critical care in an emergency department, with 65.83 % ⁽¹²⁾.

The characteristic that disagrees with the results of some studies is the age range. The present study identified the 14-to-29-year age range as the predominant one; however, others, such as that of Rodríguez-Páez, in Colombia, found a predominance in the 15-to-44-year age range, with 57.00 % ⁽¹³⁾; Correa-Betancour, in Chile, in the 20-to-44-year age range, with 72.40 % ⁽¹⁴⁾; Taype-Waldo, in Peru, in those over 60 years, with 55.02 % ⁽¹⁵⁾; and González-Peredo, in Spain, in the 31-to-50-year age range and those over 65 years ⁽¹⁶⁾.

On the other hand, priority level IV prevailed in this study. According to another research, such priority level is one of the most frequently found in emergency departments of high-complexity health centers ⁽¹⁷⁾ and patients with that priority level are frequently referred to the Internal Medicine area ⁽¹⁸⁾. This trend is consistent with other similar studies such as the one conducted in Chile, where less severe levels are also predominant ⁽¹⁹⁾; however, there is an opposite result in a study carried out in Colombia, where priority level II stands out ⁽²⁰⁾.

A study carried out in Ecuador on the analysis of quality management states that 60 % of outpatients disagree with the waiting time, so this should be taken into account for decision-making ⁽²¹⁾. Thus, the implementation of an adequate strategy improves waiting time ⁽²²⁾ and outpatient satisfaction ⁽²³⁾. However, other studies, such as that of Suárez-Lima in Ecuador, indicate a high percentage of dissatisfaction despite a considerable waiting time ⁽²⁴⁾. On the other hand, Ayuzo-del Valle considers the choice of updated strategies as a necessary measure of health services management with emphasis on emergency department ⁽²⁵⁾.

Outpatient satisfaction is considered a measure of quality control ^(26,27) and the questionnaire validated by MINSA and used in hospitals is the modified SERVQUAL questionnaire ⁽²⁸⁾. Out of the five dimensions evaluated in this study, empathy prevails; this result is similar to that of Piedra-Valoy ⁽²⁹⁾, where it accounts for 91.94 % of satisfaction, but opposite to that of Boada-Niño ⁽³⁰⁾, who states that reliability, with 84.75 %, is one of the dimensions with the highest satisfaction score. On the contrary, the present study identifies reliability as the dimension with the lowest satisfaction score, with 48.52 %.

One limitation of this research is that the modified SERVQUAL questionnaire was only administered to the group treated at the Emergency Department after the implementation of the Immediate Care Office due to issues with the granting of research permissions by the Hospital. Therefore, the results are limited to the satisfaction of a group of outpatients after the implementation of a quality management strategy and are not compared with the satisfaction of the group that did not undergo such implementation. It is recommended to conduct similar studies in other public hospitals considering these data before the implementation of a strategy such as this one in order to achieve a more complete analysis of its effectiveness.

In conclusion, the implementation of the Immediate Care Office as a new quality management strategy had better results in the waiting time. Consequently, it showed an association with outpatient satisfaction, as well as satisfaction in the five dimensions of quality of care. These results support the analysis of the implementation of strategies for improving medical care in the different high-complexity health centers.

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