ORIGINAL RESEARCH

Feasibility and reliability of a quality indicator system for an ambulatory dispensing service

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Abstract

Background: For a medication dispensing service to function with quality, continuous evaluation is required, which is why it is necessary to have reliable measurement tools that make it possible. Quality indicators can serve as tools for managing quality, as they are variables that directly or indirectly measure changes in a situation and help evaluate the progress made in addressing it. This article aims to determine the feasibility and reliability of a quality indicator system for a drug dispensing service for paediatric outpatients in two Mexican hospitals.

Methods: A study of the development type of health systems and services at a microlevel was conducted from October 2020 to October 2021 in the pharmaceutical service of two Mexican hospitals. To determine the feasibility of the quality indicators, a retrospective evaluation was performed, which considered the indicators that could be calculated with the available information to be feasible. To determine reliability, an inter-observer agreement study (Kappa (κ)) was performed.

Results: The feasibility analysis revealed that all five reference indicators related to the structure were feasible in both hospitals. In the Infantil of the Californias hospital, all six process indicators evaluated were feasible, whilst only one was found feasible in H+ Querétaro. As for outcome indicators, only one was feasible in the Infantil of the Californias hospital. The causes of non-feasibility in both hospitals were the non-documentation of the primary data related to the stages of the process and the lack of instruments to measure patient satisfaction. The reliability of the indicators showed little variability.

Conclusion: Although not all indicators were feasible, solutions were proposed so that the 15 reference indicators could be used if an organization decided to do so. The reliability of the indicators was demonstrated, evidencing the importance of the data sheet as a tool to generate valid reliable measures.

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Introduction

Medication dispensing services are a key component of pharmaceutical services and, therefore, of the health services, and they include the pharmacist as the last contact of the patient with the health system before outpatient usage of the prescribed medication. For this service to function with quality, continuous evaluation is required, for which it is necessary to have measurement

tools that make it possible to assess the initial situation, to identify problems or situations to be studied specifically, or be the object of intervention to improve and evaluate the effectiveness of the care provided; indicators are a useful tool for this purpose.[1]

An indicator is a variable with characteristics of quality, quantity and time, used to measure, directly or indirectly, changes in a situation and appreciate the progress made in addressing it.[2] Under Donabedian's health quality approach,[3] quality indicators of the structure of services are managed to measure the quality of the characteristics of the framework in which the services are provided and the state of the resources to provide them; process quality indicators measure, directly or indirectly, the quality of the activity carried out during patient care; and results-based indicators measure the level of success achieved in the patient, that is, whether what was intended with the activities carried out during the care process was achieved. Indicators quickly, easily and concisely provide valuable information about how the health service in question is performing and allow comparisons in time and space that would otherwise be impossible to make.[2]

An example of a proposed dispensing-related process indicator measures the total number of drug-related problems (DRPs) in relation to the number of dispensations performed. This indicator will express the relationship of how many DRPs on average are detected for each dispensation, which will allow intervention in a timely manner for the prevention and/or resolution of DRPs as well as the establishment of strategies to reduce DRPs as much as possible in the prescription process.

The actual integration of quality indicators into daily business is a challenge that is not without drawbacks, amongst which the time factor and the added workload are particularly relevant. Obviously, it may not be feasible to measure, monitor and evaluate a large number of indicators at the same time; therefore, it is necessary to carefully select those to be used in order to avoid excessive overload.[2] The literature reports studies related to the feasibility and reliability of indicators as a necessary step to optimize the culture of evaluating the quality of health services.[2–9] Likewise, the use of statistical analyses, such as the κ index, has proven to be a useful and effective tool for determining reliability.[9–20]

Bermúdez et al. published an article in 2021[1] in which the design and validation of a system of quality indicators for an outpatient dispensing service for paediatric patients were developed through a systematic and qualitative approach. Starting from the premise that the indicators developed in that study can be applied in any type of pharmaceutical service in institutions with similar characteristics, our study aims to determine the feasibility and reliability of these indicators in two Mexican hospitals with this type of service.

Having a system of indicators recognized in the international literature and validated in the conditions of the hospitals under study lays the foundations for the improvement of quality management systems in these institutions, whilst generating tools that continuously improve the quality of the health services provided, which will result in an increase in clinical and economic efficiency that will benefit patients, hospitals and the health system.

This study is aimed at determining the feasibility and reliability of a system of indicators for a drug dispensing service for paediatric outpatients in two Mexican hospitals through a retrospective and inter-observer agreement study to manage the quality of said service.

Methods

Research was carried out on the development of health systems and services at the microlevel from October 2020 to October 2021 in the pharmaceutical services units of two Mexican hospitals with similar characteristics: one located in the city of Querétaro, Hospital H+ Querétaro, and the other located in the city of Tijuana, Hospital Infantil de las Californias. This system of quality indicators consisted of 15 indicators for an outpatient medication dispensing service for paediatric patients; the two main sequential stages developed are described below.

The evaluated indicators were published by Bermúdez et al.[1]; this is a system of indicators developed for an outpatient medication dispensing service from a hospital that included: five structure indicators (physical space, availability of human resources, human resources training, patient records and standard operating procedures), seven process indicators (active dispensation, DRPs, written informative materials delivered to patients, referral to pharmacotherapeutic follow-up from the dispensation, referral to pharmacovigilance from the dispensation and referral to health education from the dispensation) and four result indicators (impact of the referral dispensation–pharmacotherapeutic follow-up, impact of the referral dispensation–health education, user satisfaction and health professional satisfaction).

Each indicator has a technical sheet that includes the following characteristics: objective, definition, rationale, attribute/dimension, type, method, calculation formula, measurement unit, information source, periodicity, responsible person and reference, which guide its application, determination and interpretation.

Feasibility

Feasibility was defined as the ease with which the indicator can be accurately measured; therefore, the availability to access and collect the data needed for the assessment.[16] In other words, indicators that could be evaluated with the information available in the organization are considered feasible.

For its evaluation, two teams of evaluators were formed (one for each hospital) with two persons in each team, guided by the principal investigator of the study. The teams retrospectively reviewed the (paper) records of paediatric patients seen by the dispensing service. Additionally, a record was made of the difficulties reported by the evaluators when measuring the indicators.

The indicators were organized according to their type (structure, process and result). The equations for their calculation were defined and, based on these, the sources of primary data were located and selected to make them available for reliability assessment. Each evaluator on the team performed the analysis separately and then they were compared by the principal investigator of the study to assess agreement.

Reliability

Once the indicators that could be measured had been determined, the reliability study was conducted. Reliability was defined as the degree of reproducibility of the results of a criterion when the tool is used by different observers or evaluators, it should be replicable under similar conditions and show changes when conditions are altered.[21] To calculate the reliability of the indicators that proved to be feasible, measurements were taken from 1 year of work (October 2020 to October 2021) in both hospitals, respecting the organizational standards established in the service as well as the standard operating procedure of the same to perform the dispensing. The indicators were calculated according to the periodicity defined in the data sheet and according to the characteristics described.

The design of the experiment included one team for hospital and two evaluators in each team, guided by the main investigator of the study. The measurements of the indicators were performed independently, with at least 1 week's difference between the evaluators; a week was established between the determinations taking into consideration their workload because, in both cases, the evaluators were pharmaceutical professionals from the service who were in charge of other activities. There was no blinding in the study; clinical information for calculating the indicators was always available.[22]

To check the reliability of the indicators that were feasible in each of the study hospitals, an inter-observer concordance analysis was performed using the κ measurement index, adjusted for prevalence and bias. Results were interpreted using the Landis and Koch criteria of moderate reliability if $\kappa > 0.4$, substantial if $\kappa > 0.6$ and near perfect if $\kappa > 0.8$.[17] To process the data, a database was created in Microsoft Excel with measurements of the quality indicators, and the inter-observer concordance index was calculated using the statistical programme Stata 13.

Ethics

This research was approved by the co-ordination of the research and postgraduate studies and the direction of research of the Autonomous University of the Hidalgo State, Mexico, and by the Ethics and Research Committee of the institutions under study with code CEI2020b-04V1.

Results

Regarding feasibility, of the 15 indicators evaluated at the H+ Querétaro hospital (Tables 1–3), 6 were considered feasible: 5 structure indicators, 1 process indicator and no outcome indicator. In the case of the Hospital Infantil de las Californias, a total of 12 feasible indicators were obtained out of the 15 proposed: 5 for structure, 6 for process and 1 for outcomes (Tables 1–3).

Tables 4 and 5 show the causes of non-feasibility of the indicators for both hospitals. As can be seen, the causes range from lack of data documentation, lack of printed material available to deliver to patients, and instruments to measure indicator variables such as satisfaction.

Table 6 shows the results obtained from the reliability study. As can be seen, in the H+ Querétaro hospital, most indicators had a κ index of 1, with the exception of the structure indicators 'Availability of human resources' ($\kappa = 0.71$) and 'Patient records' ($\kappa = 0.97$). For Hospital Infantil de las Californias, a κ index of 1 was obtained for all indicators.

Discussion

The pharmaceutical services department of both the included hospitals have an outpatient medication dispensing service, mainly for paediatric patients, in which the responsible pharmacist has the role of dispensing of medications prepared in the pharmacotechnical unit of said pharmaceutical services. Additionally, they provide health education and pharmacotherapeutic follow-up to patients. The dispensing of medicines is carried out under the regulations of a standard operating procedure in both institutions.

Table 1.   Structure indicators evaluated in the two hospitals.

Structure indicators				
Indicators	**Calculation formula**	**Data source**	**Feasibility**	
			Hospital H+ Querétaro	**Hospital Infantil de las Californias**
Physical space	= (Location + areas/2) x 100	PR–PD	Yes	Yes
Availability of human resources	= (Number of pharmaceutical professionals who can offer their services in drug dispensing/ideal number of professionals for the service) x 100	PR–OC	Yes	Yes
Human resources training	= (Number of trained personnel/total number of available personnel in the dispensation service) x 100	PR–AL–PE	Yes	Yes
PR	= (Number of characteristics that the dispensing service database fulfils/total number of characteristics to be evaluated (2)) x 100	PR	Yes	Yes
SOP	= (Summary of all the characteristics found in the SOP/total number of characteristics (3)) x 100	PR–SOP	Yes	Yes

The data are extracted from primary data sources (medical records and dispensing service records).
AL, attendance list; OC, organization chart; PD, pharmacy diagram; PE, passed exams; PR, patient records; SOP, standard operating procedure.

The main reasons why the indicators were not feasible in both hospitals were the lack of registration of DRPs detected and pharmaceutical interventions performed and, in the case of the satisfaction indicator, the lack of surveys to measure satisfaction and the lack of an instrument to evaluate it (satisfaction survey). In this regard, the scientific literature shows that problems with the feasibility of measuring relevant indicators due to deficiencies in the registration systems seem to be a common problem in Mexico.[10]

In two studies found,[10,23] it is observed that the main factors that hindered the measurement of the other indicators were difficulty in finding information, which was sometimes non-existent or located in more than one record, making it impossible to associate unequivocally; the low frequency of cases to evaluate; and the absence of the minimum necessary information about the actions carried out in the hospital, which coincides with the findings of this investigation.

Indicators are a fundamental tool to evaluate and predict trends regarding economic issues as well as to assess compliance with the goals and objectives set in organizations. Therefore, identification of the causes of non-feasibility is undoubtedly a valuable aspect

because it allows locating what and how to document the primary data needed to calculate the indicator.

To exemplify the usefulness and economic impact of the use of indicators for organizations (hospitals), we present the process indicator 'medication-related problems'. This indicator determines the relationship between the number of DRPs per validated prescriptions. By determining the behaviour of how many DRPs per validated prescription are achieved in a period, action could be taken to avoid, for example, problems of inappropriate prescribing that may lead to non-achievement of the purpose of drug treatment and thus to a therapeutic failure that may require hospital admission of the patient with resulting health costs for the patient and the institutions. Likewise, the indicator allows the timely detection of problems of unsafety of the prescribed pharmacotherapies, leading to the avoidance of hospital admissions due to adverse reactions to medications, which would translate into increases in hospital stays and greater spending on health services for organizations, the patient, family and community. International literature states that inappropriate prescription of medications is considered a public health problem because it decreases patient safety and increases the risk of adverse drug reactions, morbidity and mortality,

Table 2.   Process indicators evaluated in the two hospitals.

Process indicators				
Indicators	**Calculation formula**	**Data source**	**Feasibility**	
			Hospital H+ Querétaro	**Hospital Infantil de las Californias**
Active dispensation	= (Total number of active dispensations/total number of dispensations in the term) x 100	PR	Yes	Yes
Drug-related problem	= (Total number of identified DRP/total number of active dispensations in the term) x 100	PR	No	Yes
Written informative materials delivered to patients	= ($\Sigma i=1 i=n$ number of materials prepared/total number of patients that were given material) x 100	PR	No	Yes
Referral to pharmacotherapeutic follow-up from the dispensation	= (Total number of patients referred to the pharmaceutical follow-up service/ total number of dispensed patients) x 100	PR	No	Yes
Referral to pharmacovigilance from the dispensation	= (Total number of patients referred to the pharmacovigilance service/total number of dispensed patients) x 100	PR	No	Yes
Referral to health education from the dispensation	= (Total number of patients referred to the health education service/total number of dispensed patients) x 100	PR	No	Yes

The data are extracted from primary data sources (medical records and dispensing service records).
PR, Patient records.

healthcare costs and visits to the emergency room, with a lower perceived quality of health.[24]

As a result of the feasibility study, the reasons why measuring the indicators was not feasible were identified, and solutions were proposed for perfecting the dispensing service and to improve its quality in both hospitals because they share the same problems. From the analysis of results for the five process indicators that were not feasible (DRPs, written informative materials delivered to patients, referral to pharmacotherapeutic follow-up from the dispensation, referral to pharmacovigilance from the dispensation, and referral to health education from the dispensation), proposals for possible implementation are discussed later.

For the indicator DRPs, we propose the inclusion of a section in the dispensing format where DRPs detected can be recorded. For the indicator 'written information material delivered to patients', we proposed the availability of a folder with printed material, that is, easily accessible as well as a digital folder with a copy of the material to support the information activities carried out with patients at the time of dispensing. Likewise, for the indicators 'referrals to pharmacotherapeutic follow-up after dispensing', 'referrals to pharmacovigilance after dispensing' and 'referrals to health education after dispensing', we propose the inclusion of a section with the referrals to the pharmacotherapeutic follow-up, pharmacovigilance and health education services in the dispensing format so that they can be documented in order to calculate these indicators and have traceability. Of note, these activities were performed in the pharmaceutical services of both hospitals; however, they are not regularly documented. A publication found in the context of this research showed similar results related to the lack of documentation of activities.[23]

During the period of this research, it became evident that clinical pharmacy activity records did not exist in the institutions studied, which did not allow the calculation of the indicators. The causes for the absence of these records were diverse and amongst the most common were the loss of the information because it was

Table 3.   Outcome indicators evaluated in the two hospitals.

| | | | Feasibility | |
Indicators	Calculation formula	Data source	Hospital H+ Querétaro	Hospital Infantil de las Californias
Impact of the referral dispensation–PhF follow-up	= (The total number of DRP detected in the dispensation/total DRP resolved in the PhF) x 100	PR	No	Yes
Impact of the referral dispensation–health education	= (Total number of patients with a positive attitude and behaviour after education/total number of patients derived from the dispensation to health education) x 100	PR	No	No
User satisfaction	= (Total number of patients satisfied with the dispensation service/total number of surveyed users) x 100	PR	No	No
Health professional satisfaction	= (Number of satisfied health professionals/total number of surveyed professionals) x 100	PR	No	No

The data are extracted from primary data sources (medical records and dispensing service records).
DRP, drug-related problems; PhF, pharmacotherapeutic; PR, patient records.

carried out by another pharmacist not present in the institution during the study period as well as the failure to carry out the pharmaceutical care activities established in the Handbook of Standards and Procedures for Hospital Pharmacies.

Current research points to the importance of documenting the information generated by pharmacists' clinical activity as a way of demonstrating that pharmaceutical interventions enhance the quality of patient care. Zierler et al. point out that pharmacists have the possibility of building a collaborative relationship with other professionals of the team and with patients so that documentation can prove evidence of this symbolic relationship.[25] It is also stated that documentation is the key to excellent communication between the pharmacist and the patient and the rest of the healthcare team, and it allows evaluation of the use of medications. Furthermore, it is a support for the training of healthcare professionals and a method that improves the continuum of healthcare and constitutes a quality assurance tool.[26]

In relation to the results indicators, for the indicator 'impact of referrals to pharmacotherapeutic follow-up after dispensing', we propose the inclusion of a section in the dispensing form to record the negative outcomes associated with medication detected during dispensing and to follow-up on the interventions carried out and the resolution of these negative outcomes as a result of these interventions. Further, we propose the addition of

a section in the dispensing form to record these data in order to calculate this indicator.

In the case of the indicator 'impact of referrals for health education', it is proposed to establish an instrument to assess the attitude and behaviour of patients before and after the educational interventions carried out during dispensing, based on the fact that the patients attended systematically go to the dispensing service to access their medication, which will allow working systematically on inappropriate attitudes and behaviours in the use of medicines. A published study proposes the evaluation of patient behaviour and attitude as quality indicators to assess the impact of pharmaceutical interventions.[27]

In the case of the indicators that measure 'user satisfaction' and 'health professional satisfaction' with the dispensing service, we propose the establishment of a survey to evaluate these indicators. Additionally, this survey should be integrated into the care process to measure the satisfaction of patients and/or caregivers with the service provided; likewise, a section should be included in the dispensing form to collect the results of the survey. In the case of professional satisfaction, in addition to establishing a survey, we proposed that the information gathered be entered in a database that compiles this information. The literature states: "*If we think that health care is especially aimed at improving the health of individuals and communities, it is natural that the opinion of patients constitutes one of the main indicators of its*

Table 4. Causes of non-feasibility of quality indicators at Hospital H+ Querétaro.

Indicators	Causes of non-feasibility
Process	
Drug-related problem	Lack of documentation of detected drug-related problems
Written informative materials delivered to patients	Deficiency of printed material, no informative material available
Referral to pharmacotherapeutic follow-up from the dispensation	There is no record of referrals to other services
Referral to pharmacovigilance from the dispensation	There is no record of referrals to other services
Referral to health education from the dispensation	There is no record of referrals to other services
Result	
Impact of the referral dispensation 'pharmacotherapeutic follow-up'	There is no report of negative Outcomes associated with medication detected in the dispensing; therefore, there is no record of pharmacotherapeutic follow-up
Impact of the referral dispensation 'health education'	No patients were referred to the health education service, so there is no record of the attitude after health education
User satisfaction	There is no survey to measure satisfaction
Health professional satisfaction	There is no survey to measure satisfaction

The data are extracted from primary data sources (medical records and dispensing service records).

Table 5. Causes of non-feasibility of the outcomes indicators in the Hospital Infantil de las Californias.

Indicators	Causes of non-feasibility
Impact of the referral dispensation–health education	There is no record or instruments that allow evaluating the attitude and/or behaviour of patients at the time of health education
User satisfaction	There is no survey or any tool to assess patient satisfaction
Health professional satisfaction	There is no survey or any tool to measure the satisfaction of health professionals

The data are extracted from primary data sources (medical records and dispensing service records).

quality".[28] This is the basis for the current efforts towards the so-called 'customer-oriented systems' or 'responsiveness' to the expectations of the population, as an important quality of health systems.[28] Patient satisfaction with the services they receive should be approached from its usefulness as an outcome measure of the care activity that contributes to increasing the quality of the service provided.[29] On the other hand, the satisfaction of the healthcare team professionals will make it possible to evaluate the appropriate interrelation between the health team as a determining element in a good health service that finally satisfies the needs and expectations of patients. The collaboration between different stakeholders in the profession is essential to support pharmacists' efforts in achieving a change in the scope of pharmacy practice to improve patient care services.[30]

The reliability of the indicators was quite stable; most of them displayed an almost perfect reliability according to the Landis and Koch classification.[17] For the Hospital Infantil de las Californias, all the quality indicators measured had perfect reliability, according to the κ index calculated, whilst most were above 0.6 for the H+ Querétaro hospital, with almost perfect reliability.

The fact that the reliability values are exactly the same (κ=1) for all indicators at the Hospital Infantil of the Californias could be due to the specificity of the indicator data sheet so that the evaluator could easily identify the source to calculate the indicators that were feasible.

All the quality indicators calculated were reliable; the indicator with the lowest κ index obtained was the structure indicator (availability of human resources) at the H+ Querétaro hospital with 0.71. The value obtained for the indicator 'Availability of human resources' (400%) reflects that the number of personnel available to provide the dispensing service is greater than what is established as ideal to provide the service (1 pharmacist for every 50 patients). This result was due to the fact that evaluator 1 considered all the personnel available and trained in the pharmaceutical service to calculate the indicator (see numerator of the calculation equation in Table 2), whilst evaluator 2 considered only the personnel who carried out outpatient dispensing during the evaluated period. This result shows that the definitions of the variables

Table 6.   Reliability of quality indicators in hospitals H+ Querétaro and Infantil de las Californias.

Indicator name	Indicator behaviour Hospital H+ Queretaro			Indicator behaviour Infantil de las Californias		
	Evaluator 1	Evaluator 2	κ	Evaluator 1	Evaluator 2	κ
Structure						
Physical Space[a]	75%	75%	1	100%	100%	1
Availability of human resources[b]	400.00%	100.00%	0.71[c]	58.90%	58.90%	1
Human resources training[a]	100%	100%	1	100%	100%	1
Patients record[b]	100%	96%	0.97[d]	100%	100%	1
Standard operating procedure[a]	100.00%	100.00%	1	66.70%	66.70%	1
Process						
Active dispensation[b]	100%	100%	1	100%	100%	1
Drug-related problem[b]	.	.	.	0.60%	0.60%	1
Written informative materials delivered to patients[b]	.	.	.	0.041	0.041	1
Referral to pharmacotherapeutic follow-up from the dispensation[b]	.	.	.	0.05%	0.05%	1
Referral to pharmacovigilance from the dispensation[b]	.	.	.	0.05%	0.05%	1
Referral to health education from the dispensation[b]	.	.	.	0	0	1
Result						
Impact of the referral dispensation–Pharmacotherapeutic follow-up[b]	.	.	.	100%	100%	1

The data are extracted from primary data sources (medical records and dispensing service records).
[a]Indicator with annual measurement frequency (n=1).
[b]Indicator with monthly measurement frequency (n=12).
[c]Almost perfect.
[d]Considerable.

included in the indicator must be improved, that is, that the numerators of the equation specify 'staff that performed outpatient dispensing during the month' instead of 'number of professionals available in the service'. In this sense, the result obtained is useful for a better redefinition of the indicator.

The study published by Saturno et al.[10] determined the feasibility of measurement and reliability of quality indicators of care for neonates with relevant conditions in Mexico. The results of this study showed that the reliability of the indicators was variable, that the low indices found in hospital A made it necessary to discuss and redefine the terms or the way of measuring the indicators, which did reach acceptable levels of reliability in hospital B, whilst another indicator 'identification of muscle tone depression' as a sign of perinatal asphyxia had to be discarded because it required interpretation by

the evaluators. These results exemplify the need to test the reliability of quality indicators before use to achieve consistent measurements.

In the case of the 'patient record' structure indicator, the κ index was 0.97. The result obtained is due to the fact that evaluator 1 assumed that the dispensing database was updated in all the months evaluated (12 months), whereas evaluator 2 found that in the year evaluated, the database was not updated in the month of October. This result allows the identification of variations that could occur as a consequence of the variability introduced by the human factor, but the results showed a high reliability (κ=0.97).

Determining the feasibility and reliability of a system of quality indicators for drug dispensing services to outpatients, specifically paediatrics, puts these indicators

into practice whilst allowing the identification of points for improvement in the dispensing activity and also in other activities related to said service such as pharmacotechnics, health education, pharmacovigilance and pharmacotherapeutic follow-up in the hospitals studied, evidencing the systemic approach of the indicators that were reported by Bermúdez et al. in 2021. It allows improving the documentation and traceability of the activity performed by identifying through the feasibility study all the information derived from the dispensing activity and other related activities that are not documented resulting in that some indicators cannot be calculated. On the other hand, it allows the pharmaceutical services of both hospitals to improve the dispensing processes and all other related activities. The reliability study also provides the behaviour of the indicators studied for 1 year, which could be used as standards to evaluate the quality of the dispensing service in the hospitals under study and in other institutions offering similar services. The system of indicators evaluated allows for an integral analysis of the quality of the service provided, taking into consideration its structure, process and results and, in general, demonstrates the practical relevance of the indicators designed in the reference study.

Study limitations

The study has the following limitations: The evaluators were part of the pharmacy service, which could influence the mastery of the activities performed within the outpatient dispensing service; however, depending on the purpose of the study, which is to determine feasibility and reliability, the fact that they were part of the pharmacy service facilitates access to information, as hospital policy would not allow external evaluators to enter. To mitigate the impact of the evaluation carried out by the hospital evaluators, the external research team organized an evaluation workshop based on the data collected. On the other hand, despite this limitation, the results obtained are considered positive because they have allowed the refinement of the indicators and the generation of valuable information for a future evaluation of the quality of this service in both institutions.

Conclusions

The feasibility study allowed the identification of viable indicators and the analysis of the causes of non-feasibility in order to propose solutions so that in the future all the indicators can be used in the assistance practice from both hospitals.

The indicators studied showed reliability, thus serving as tools to generate measures and standards to evaluate the quality of the dispensing service in the hospitals studied.

This study highlights the importance of a holistic conception of indicators, considering the structure, process and results, for the provision of a dispensing pharmaceutical service, performing an integral analysis of the quality of the service provided for its continuous improvement.

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