Technologies as Tools for Quality Management in Health Services

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Abstract— Since World War II, there has been a concern related to the quality standard of industrial production. Adapting to the reality of the health sector, it sought to improve the management of the quality of its services, aiming, in addition to satisfying its internal and external

customers, the safety of its patients. The objective was to settle how technologies influence the quality management of the health sector today. Thus, this article presents as a methodology a bibliographic research in which a literature review of the last five years was carried out in scientific articles, analyzed in the months of November and December 2021, using the following descriptors: technology, health and quality. As a result, it can be seen that technologies are important allies of management in health services, providing patient safety, systematization, organization and agility in processes, reducing workload and reducing costs for the organization. However, it is essential that managers are attentive to develop training and adherence strategies for professionals responsible for feeding the computerized systems, in order to guarantee the quality of information and the achievement of the intended results.

I. INTRODUCTION

Thinking about the quality of the services provided, regardless of the area of activity, involves organizational efforts in order to mobilize the entire team, since to offer a satisfactory final result, the work goes through the institution's top management to those who work at the end, in the contact directly with the customer.

When talking about quality management, Lago [1] points out that:

> It is essential to guide the processes and redirection of energy within the management, for the fact that when the consumer purchases a product or a good, even if unconsciously, this choice is based on a "cost-benefit" relationship. This is no different for the health sector, as the client seeks affordable prices and quality in the care provided.

In the health sector, in addition to the desired quality, it is a service that is directly linked to the life of the individual, and that often if the service provided is not adequate and unsatisfactory, it can be fatal for the client involved. In this sense, all possible efforts must be made to deliver the best.

Technologies add an important source of support in all care processes, ensuring patient safety and systematization, organization and agility in the actions and services provided.

Given this context, this paper aims to discuss how technologies influence the quality management of the health sector today.

II. METHODOLOGY

This is a qualitative, exploratory, bibliographic research, in which a literature review of the last five years was carried out on scientific articles in the Virtual Health Library database, analyzed in November and December 2021, using use the following descriptors: quality, health and technology. 900 articles were found, of which 28 were directly related to the theme. After applying the eligibility criteria: three most relevant studies for each descriptor, full text, in Portuguese and indexed, the abstracts were read and the studies that met the theme related to the object of study were selected. They were thoroughly read in full to effectively absorb their content. Discussions related to the five most relevant articles will be presented here.

III. RESULTS AND DISCUSSION

3.1 Quality Management in Health

Considering that we are experiencing a moment in which clients are much more demanding and aware of their rights in relation to their own health, mainly because they have more access to information than in the past, one must think about "a change in managerial posture, involving all sectors of the organization with a focus on excellence" [1].

To achieve the expected results in terms of quality management, it is important to emphasize that:

> Quality management in healthcare is an area in constant growth, which absorbs changes in the competitive and demanding market. Institutions are no longer understood only as places of prevention and care for patients and begin to be seen as organizations that need management and focus on the patient [1].

Technologies together with other valuable tools such as quality indicators, accreditation seal, diagrams, scales and various graphs can and should help managers to develop strategies for organizations to achieve the expected results. It is important to emphasize that these tools can be incorporated into computerized systems, generating decisive data and information. They serve as an anchor for

quality management in health, directly contributing to the effectiveness of the implemented actions.

Quality management can make use of numerous resources that information systems provide, these when "well designed and organized are crucial for the decision-making process in health, as they provide data and knowledge about the real need of the assisted population, helping in the planning of managerial actions and in the decision-making process of professionals [...]" [2].

3.2 Technologies and their Influence on the Health Sector

According to Salomi and Maciel [3] "as in any other organization, in a hospital, both Information Technology (IT) and Information Systems (IS) permeate the various hierarchical and functional levels", playing a fundamental role in various scenarios.

The IS, when applied to the health area, provides multiple technological resources that, in addition to care management, allow the implementation of barriers to the occurrence of adverse events, thus acting directly on patient safety and qualification of the care provided [4].

Patients are accompanied by different professionals: doctors of different specialties, psychologists, nurses, physiotherapists, social workers, nutritionists, among others. In this context, there is a major problem of communication between all these professionals, which is historically rooted in health services. At this point, technologies come to alleviate many of these communication failures, as it is currently possible to enter all information relevant to the treatment of patients in electronic medical records systems and, thus, any professionals will be able to access this information in real time, preventing the same are lost in papers that were once so commonplace.

Study developed by Ferreira [4], corroborates stating that "control and access to all care and procedures through the computerized system are a resource that is easily available, due to the practicality to view patient information and all actions related to the care provided".

Another important scenario in which the IS is inserted is in the control of medications, helping the professional in prescribing, dispensing, checking and administering medications, greatly reducing the possibility of errors in medication administration, forming real barriers to the occurrence of adverse events involving medications, unfortunately so common in the routine of health services.

> Healthcare IT systems, such as electronic health records and computerized medical order entry, have the potential to improve quality and reduce costs. In general, they are designed to improve

communication between different providers within a healthcare organization. In addition, these technologies facilitate the implementation of goals and the use of decision support tools, which can be particularly valuable in preventing errors in processes [3].

In the same study by Salomi and Maciel [3] it was found that "for patients, the most obvious benefit was the speed of care. [...] the technology facilitated the perception of the waiting times to which each patient was subjected until being seen".

Another aspect that can be approached from the perspective of the patient, concerns a major change that is currently perceived in the level of information and access of these to Internet services. In this context, Malik [5] explains that access to the network:

> [...] does not mean really good quality information. The most difficult thing for different users is to discriminate what is useful, what is useless and even what is outdated or wrong. The patient having access to the results of his exams can be good, but he does not have the technical competence to interpret them alone, nor with the help of existing websites. In the same way, collecting lists of symptoms does not help to configure a diagnosis, confronting healthcare professionals with information collected online does not facilitate the introduction of a therapy [...].

Given this scenario, it is essential that there is a process of training professionals to deal with these very common situations, and awareness of patients who, when seeking information from dubious sources, create expectations that are often exacerbated and negative, generating unnecessary anxiety and discomfort.

Technologies are very useful and welcome in health when well used. As an example, in countries where telemedicine (e-health) is widely used, there is already a gain in time in patient care, thus reducing the workload on professionals, service costs are lower, generating savings for the organization, which can invest in other demands. Professionals feel more secure and satisfied with their work, have lower absenteeism and turnover rates, reflecting the improvement in the quality of patient care. Undoubtedly, this brings more security to professionals and patients.

Complementing the above, Malik [5] notes that:

> In Brazil, telemedicine is defined as a national system for assistance and education, involving teaching/reference institutions and primary and secondary services. It has been proven to be an

efficient tool for increasing access [...]. It guarantees economy and risk reduction for the system, for professionals and for patients, reducing the need for displacements.

However, it is important to emphasize that for the use of telemedicine, training of those involved is necessary, so that its implementation "must be combined with appropriate changes in the processes and in the organization, guided by duly qualified people" [3].

To ensure reliable information, it is essential that the professionals who feed the system are able to do so, that they actually appropriate the necessary knowledge for this action. At this point, management plays a fundamental role, seeking improvement strategies, directing the organization to the best possible decision-making. It can therefore be said that technologies are true tools to transform the provision of care.

In addition, leaders must pay attention to the issue of professionals' adherence to the use of technologies, so that they internalize the use of technologies as a normal and daily work tool. It is also important to note the need for a contingency plan in case the computerized system becomes unavailable.

IV. CONCLUSION

Technologies play an important role in supporting health organizations, guiding the decisions of managers so that the final result is quality of services provided, internal and external customer satisfaction, reduction of work overload, agility in service, cost reduction. , among others.

In terms of the patient, the main benefit observed is the speed of care, as the change observed with the implementation of technologies is quite significant.

However, managers need to develop training strategies and employees' adherence to the use of technologies, so that reliable information is obtained based on the data fed by the responsible professionals. This is the only way to guarantee the quality of the information so that the expected results are achieved.

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