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# Quality Approach Model Implementation in Public Hospitals - The National Institute of Oncology (Morocco) as a Case Study

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## ABSTRACT

**Introduction:** The quality approach implementation in Moroccan public hospitals (MPH) is a major challenge for improving access, safety, quality, and performance in health care provision. Faced with the increasingly demanding expectations of the health system users and the universal health recommendations, the development of a national health system in accordance with international quality standards is becoming a challenge for the Moroccan health system, hence the importance of implementing a quality approach adapted to each hospital's context.

**Design and Methods:** This is a cross-sectional study that occurred from January 01, 2018, to March 31, 2021, at the National Institute of oncology (NIO), 12 resource persons participated in the focus group; the documents used included the NIO establishment project, quality activity reports, and the service quality manual. They were chosen using the non-probability sampling method with the conventional technique for resource persons.

**Results:** The results propose a new framework for the implementation of a sustainable and continuous quality approach in MPH. The latter was tested in the NIO and gave convincing results; such as the reduction in infection rates by (30% in 2018 to 04% in 2020), the reduction of the time taken to receive chemotherapy preparations from (between 1 and 2 hours in 2019) to (less than an hour in 2020) and the improvement in group dynamics and communication with users.

**Conclusion:** In this article, we have highlighted the quality governance model, the conceptual framework, the inputs, and the expected results of such an approach. The generalization of this approach in MPH requires another large-scale validation study.

**Key Words:** Public hospital, Quality approach, Quality framework, National Institute of Oncology, Quality implementation, Continuous improvement

## INTRODUCTION

Hospital organizations face constant changes: changes in technology, in society, and in the user's role, which is increasingly asserting itself, in addition to the organizational changes recommended by the supervisory authorities without forgetting a large number of reforms. This evolving nature requires hospital organizations to be flexible and quick to adapt to a constantly changing context.<sup>1</sup>

The health sector has been little affected by quality procedures, while in industry, quality has been and is still a major issue for the development and sustainability of companies. It was only during the last thirty years that the industrialized countries have all embarked on major reforms of their health-care system so that they can best respond to the development

of technologies, new therapies, the ageing population, the appearance of new diseases, and the population's increased demand for access and quality of care.<sup>2</sup>

The introduction of quality in hospital organizations has not been carried out in the same way as in the industry field. The quality has been introduced into hospital organizations in a regulatory and legislative manner, such as certification procedures.<sup>1</sup>

The literature review carried out in this article highlights the difficulties encountered by healthcare professionals when implementing quality procedures imposed by regulations and unsuitable for the hospital context.<sup>3</sup>

In this article, we propose a complete framework to guide public hospital organizations and stakeholders in

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the definition, development, and implementation of a successful and continuous quality approach taking into account the complexity, limitations, and challenges of the Moroccan health system.

The proposed framework is based on four elements; quality governance to direct, guide, and coordinate quality at the national level, the main inputs to guarantee the success of the quality approach in hospitals, a conceptual quality framework, and the results of the implementation of the quality approach.

This paper is organized into eight sections: Section 1 provides the introduction, Section 2 describes the Moroccan quality implementation context, Section 3 describes the methodology foundations, Section 4 explains the preparatory steps for the National Institute of Oncology's (NIO) quality implementation, Section 5 presents the quality framework proposed, Section 6 advances the results, section 7 discusses the proposed model with related works and finally, we conclude with a summary of this research and present future work and directions.

## CONTEXT

In Morocco, the implementation of the quality approach in hospital organizations is explicitly mentioned in the new constitution of 2011, which stipulates in article 154 that "public services are subject to standards of quality, transparency, accountability, and responsibility".<sup>4</sup>

The Ministry of Health history shows that the first stages of the quality approach even date to the 1990s when a process of improving the quality of care and services through some pilot projects such as the Integral Management of Quality (IMQ) had been established in 5 regions of Morocco. Unfortunately, with the absence of a good strategy to generalize the successful approaches, and to integrate the quality management into the health services culture, the experiences started were limited to a few sites with fragile sustainability; hence, the initiative of the Ministry of Health for the implementation of a comprehensive integrated approach called Quality Competition (QC) for health structures.<sup>5</sup>

Like other hospital organizations, the Ibn Sina Hospital Center in Rabat (ISHC) implemented in 2007 a quality management program focused on the continuous improvement process, aiming to engage in a process of hospital accreditation and certification.<sup>6</sup>

The key results of this approach were the certification of the Children's Hospital Pharmacy as well as the pharmacy and laboratory of the Rabat Specialty Hospital (RSH).<sup>7</sup>

However, this approach encountered difficulties in terms of its generalization and its sustainability to other health

establishments. Indeed, a study has shown that no action in quality management has been carried out since 2011 at the level of the ISHC's hospital services.<sup>8</sup> The real mission of a quality assurance program should be assessed against its ability to place concern for quality at the center of hospital system management and this should be on an ongoing basis.<sup>9</sup>

In the same direction and to respond to the recommendations of the first and second National Cancer Prevention and Control Plans (NCPCP) 2010-2019 and 2020-2029, in addition to the universal health ones<sup>2</sup> the NIO of Rabat in partnership with the Lalla Salma Foundation-Cancer Prevention and Treatment has implemented a quality approach since 2018. The interest in the implementation of this process also stems from the motivation and mobilization of health professionals, which was intended to be very broad in this establishment, and from an assumed leadership at the clinical and administrative levels. Thus, the aim of this article is to explain the process of implementing the quality approach at the NIO, highlighting the various stages along the way to suggest a model that can be applied to all Moroccan public oncology centers.

## METHODOLOGY AND EPISTEMOLOGICAL FOUNDATIONS

### Study design

This study is a cross-sectional study that occurred from January 01, 2018, to March 31, 2021, at the NIO. This type of research offers us the possibility of carrying out an implan-tation analysis, which consists in specifying all factors influencing the results obtained following the introduction of the quality approach.<sup>10</sup> It was executed through the Donabian conceptual model, which allows us to analyze the inputs, process, and results that interact with each other for the quality approach success in the healthcare sector.<sup>11</sup>

### Site choice

The National Institute of Oncology (NIO) is a Moroccan public cancer treatment hospital, managed by a chief medical officer and governed by the ISHC in Rabat. It contains: 08 activity poles, 270 beds, and 552 healthcare professionals.

The choice of the site was guided by the involvement of the NIO in a participatory and continuous quality process, as well as by the possibility for the researcher to participate in the implementing process and take a critical look at it.

### Researcher profile

We adopted an intervening researcher posture because since 2018 and until 2021, we carry out supervision missions coupled with quality management missions in this service. This

posture inscribes us in a constructivist epistemological paradigm.

### **Information sources and sampling**

The sources of information are made up of resource people (such as the quality project steering committee members, quality referents, the managers of the NIO quality unit, and some head nurses responsible for the quality circles), administrative documents, progress reports, and regular monitoring of service quality circles.

They were chosen using the nonprobability sampling method with the conventional technique for resource persons.

In total, 12 resource persons participated in the study; the documents used included the NIO establishment project, quality activity reports, and the service quality manual.

### **Analysis techniques and data collection tools**

The data was collected by focus group techniques, observation, and documentary review using the focus group guide, an observation grid, and a documentary review sheet.

The focus group guide was designed based on the experience acquired and accumulated by the researcher working in collaboration with a quality expert: "In knowledge, there is an interdependence between knowing subject and what he studies"<sup>12</sup> which comprises 10 items divided into 03 sections.

The document observation grid included 15 items divided into 04 sections.

### **Data processing and analysis**

Manual analysis was done for the observation grid data and the documentary search sheet with a qualitative analysis of the resource persons' comments.

## **PROCESS FOR DEVELOPING THE QUALITY MODEL AT THE NIO**

To respond to the recommendations of the first and second National Cancer Prevention and Control Plans<sup>13</sup>, the Lalla Salma Foundation in partnership with the NIO launched in 2018 the first quality program intended for public oncological centers. The aim is to improve the cancer patient's quality of care.

The process for developing the quality model began with a strategic preparation phase in which decision-makers organized several meetings aiming to define the vision, governing bodies, and process implementing plans. This step was followed by a study of national and international experiences made by quality experts who carried out a benchmark and proposed a draft model to hospital leaders. This model was subsequently discussed with all staff during training and involvement sessions organized before the project kick-off.

All these actions have made the task easy and affordable for health professionals who have themselves participated in the development of the quality model that they should follow and respect.

## **PROPOSED MODEL FOR THE QUALITY APPROACH IMPLEMENTATION**

The proposed conceptual framework represents a combined model between the continuous improvement approach<sup>14</sup>, the Quality Management System (QMS) approach<sup>15</sup>, and the ISO 9001 version 2015 standard.<sup>16</sup>

The conceptual framework proposed in this article is composed of the following elements: quality governance, the necessary inputs for the quality approach implementation, the model of quality approach implementation, and the results of the quality approach implementation in public hospitals.(Figure1)

### **Quality governance**

The quality approach implementation in public hospitals requires good governance and assumed leadership at all strategic, clinical, and administrative levels.<sup>17</sup>

Thus, the French experience shows that a quality management system cannot succeed in hospital structures without the effective involvement of governance bodies and administrative and clinical leaders.<sup>18</sup>

Moreover, the Moroccan experience; in particular, of the ISHC, it has shown that the quality initiatives in this establishment did not achieve the expected objectives and remained limited to certain pilot sites due to the absence of a governing body that oversees and monitors the implementation and sustainability of the project.<sup>19</sup>

Based on these experiences, the model that we present in this work proposes the definition of a governance body with the identification of its members and the responsibilities of each one even before the start of any quality project. This body must be composed of the Ministry of Health, the quality division, quality hospital units, and doctors without forgetting the representation of a few bodies involved in hospital structure; in particular, civil society and user representatives. The attributions of this body will be the definition of the overall vision of hospital quality, the quality strategy of its investment plan, the actors concerned, as well as the monitoring and evaluation procedures.

### **Main inputs for the quality approach implementation**

The National Institute of Oncology's experience has shown that the first thing that must be done before setting up a quality approach is raising awareness and informing human resources;

this is mentioned in numerous studies which cite noninvolvement and insufficient staff information as a major obstacle to quality projects' success.<sup>20</sup>

Thus, staff training and involvement in quality is a key factor for the success of any project, this was confirmed in one of the comments by a nurse of the medical oncology department, NIO "We had no concept of quality, the training sessions helped us to join and take ownership of the project".

Without forgetting the clear definition of the quality team's members, the financial and logistical support for the realization of their activities and the importance of that was mentioned by the representative of the steering committee and quality referent in the digestive oncological surgery department, NIO "The coaching sessions provided by the Lalla Salma Foundation project consultant have enabled us to make good progress in our quality projects". As well as the head nurse of the medical oncology department, NIO, who commented "It is thanks to the Lalla Salma Foundation financial and technical support that we were able to print our protocols, guides and leaflets».

### **A conceptual framework for the quality approach implementation**

Our model is based on a combined approach between the continuous improvement approach, the QMS, and the ISO 9001 version 2015 standard.

The combination of these three approaches finds its legitimacy in the specificity of the hospital context, which is very complicated and complex because of the different logics that reign there (gain, care, and quality), the multitude of profiles who work there (doctors, nurses, administrators) and by user requirements that are becoming increasingly pressing.

We recommend starting with quality circles by following Deming's APDC wheel<sup>21</sup> for the resolution of their service's issues.

Thus, over time, the teams take ownership of the continuous improvement approach and methodology and begin asking to move on to standardizing their quality practices with another QMS method recommended by the ISO 9000/9001 version 1990 standard.<sup>22</sup>

The advantage of this approach is that it does not impose any specific technique or method that might not be suitable for the operation or the size of the service. It allows the teams, initially tired and overwhelmed by the classic methodology of continuous improvement, to focus more on the production of procedures and standards for the good functioning of the services (Actions 1,2,3) (Figure 1).

After mastering this step and preparing the procedure manual, we suggest switching to the ISO 9001 version 2015 standard

23 which integrates other dimensions such as taking into account the organization context, strengthening leadership, support and planning, performance evaluation, and certifications, and finally continuous improvement and sustainability (Actions 4,5,6,7,8,9,10) (Figure 1).

## **RESULTS**

The experience of the NIO, the analysis of the quality reports of the various teams, and the analysis of the interviews with a few resource persons have shown us that the process followed for the quality approach implementation has led to positive achievements on several plans:

### **Quality of care improvement**

The examination of the medical oncology department's quality manual showed us that there is a decrease in the chemotherapy preparation's receiving delay (between 1 and 2 hours in 2019) to (less than one hour in 2020).

Thus, the examination of the digestive surgery department's quality manual showed us a clear reduction in the infection rates (Graph 1).

### **Human resources training**

40% of the NIO's staff are trained and involved in the quality process. "Thanks to my training in quality, I was able to pass my 11 scale exam, I am very grateful." (Head nurse, digestive oncological surgery department, NIO).

### **Interpersonal communication improvement**

8 out of 12 people interviewed were pleasantly surprised by the benefits of quality on the group's dynamics and the improvement of interpersonal communication: "The weekly quality meetings are not only an opportunity to apply our knowledge on quality management but above all an opportunity to talk to each other and solve each other's problems, we can now say that we are a real team"(Head nurse, medical oncology department, NIO).

### **Improved communication with customers**

Communication with customers is one of the most important dimensions of quality. According to the comments of the resource persons, the implementation of the quality approach has greatly improved the communication with patients. "The quality circles have enabled us to improve our communication with patients, especially since our team has worked on the problem of insufficient communication at the level of the gynaecia-mammary (GM) hospitalization department. According to the feedback from patients during the therapeutic education sessions and the analysis of the register of complaints, we had a very positive feedback on the improvement

of communication and the conditions of care of our patients. »(Head nurse, gynecology-mammography(GM) department, NIO).

“The quality allowed us the opportunity to listen to the needs of our customers and to improve our services! that’s amazing “ (Nurse, Medical Oncology department, NIO).

### **Other positive achievements**

Other results related to improving the environment work and dynamics group were listed during the presentation sessions of the quality circles, so the interview with the resource persons confirmed these results. “After the training and after setting up the first quality circle, we were able to develop not only our skills but also our behavior, especially in terms of:

- Team spirit
- Group dynamic
- Spirit of planning
- Listening and communication
- Valorization of everything we do
- Traceability and documentation of everything we do
- The ability to solve any problem with the available resources
- Knowledge development
- Continuity » (Nurse, digestive oncological surgery department, NIO).

### **DISCUSSION**

The review of the literature showed us that the combined and progressive quality models have been successful in public hospital structures, this was confirmed in the study by R. Slimani and M. Boukrif<sup>24</sup> who argue that the setting up of a quality management system generates significant changes through a gradual process. Thus, the experience of the Saudi health system, which adopted a progressive quality implementation approach starting with quality assurance and gradually evolving towards the integration of the total quality principles, has witnessed great success in the Arab world.<sup>25</sup>

### **CONCLUSION**

This work proposed a new framework for implementing the quality approach in public hospital structures; it represents an important basis for guiding healthcare stakeholders in defining and implementing the vision and objectives of hospital quality. In this article, we have highlighted the quality governance model, the conceptual framework, the inputs, and the expected results of such an approach.

Evaluation and monitoring are important parts of this project to identify strengths and areas of improvement in the

quality implementation vision. To this end, this research can also be broadened to demonstrate further test results and validation of the approach to enable stakeholders to make the right quality management decisions at the public hospital.

### **SIGNIFICANCE FOR PUBLIC HEALTH**

Public hospitals in developing countries suffers from a crisis of confidence with its users, the numerous dysfunctions, unsuitable reforms and organizational problems consolidate this crisis.

Quality procedures are the best way to change this image and remedy these dysfunctions, provided that they must be adapted to the context and the means of each hospital.

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### **AUTHORS' CONTRIBUTIONS**

IE carried out the research: Conducted the literature review, designed the conceptual model and the framework, collected and analyzed the data and wrote the manuscript in consultation with MB. MB Contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript, others authors read and approved the final manuscript.

### **CONFLICT OF INTEREST**

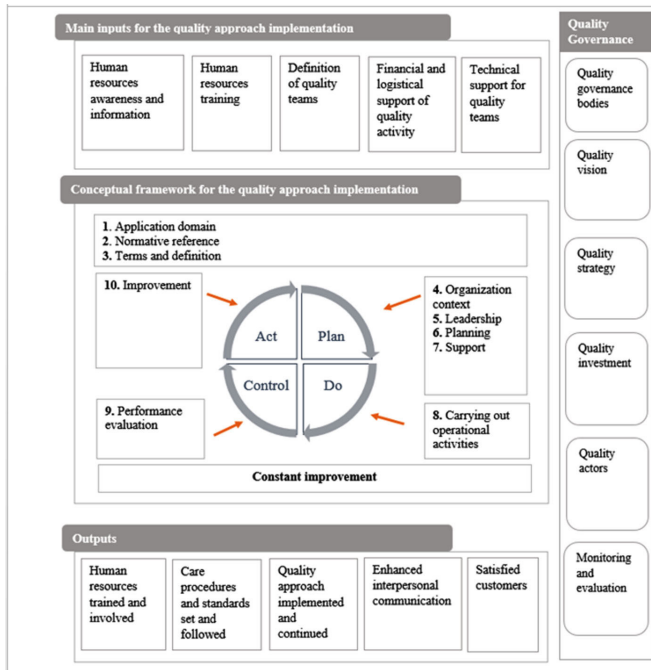
The author declares no conflicts of interest.

### **SOURCE OF FUNDING**

The author declares that there was no outside funding for the writing of this paper.

### **DATA AVAILABILITY**

The data used and/or analyzed during the current study are available from the corresponding author on reasonable request.



Graph 1: Infection rate in the digestive surgery department.

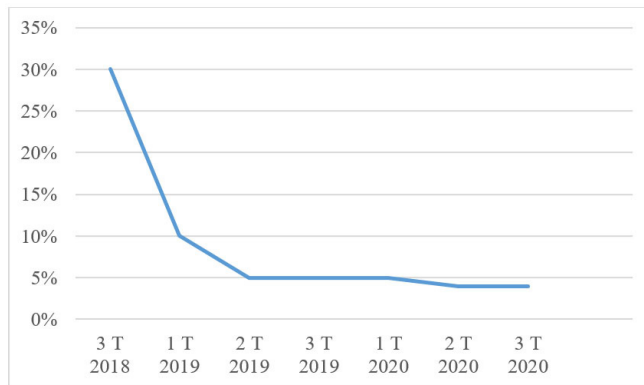


Figure 1: Quality framework and building blocks.

**Abbreviation**

**NIO:** National Institute of Oncology; **ISO:** International Organization for Standardization; **QMS:** Quality Management Systems; **IMQ:** Integral Management Quality; **ISHC:** Ibn Sina Hospital Center; **QC:** Quality Competition; **NCPCP:** National Cancer Prevention and Control Plan; **APDC:** Act, Plan, Do, and Control

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