The Journal of International Advanced Otology

J Int Adv Otol 2017; 13(1): 128–35 • DOI: 10.5152/iao.2017.2880

Original Article

Designing a Method with Physician Participation to Assess and Improve Quality of Healthcare in Otolaryngology

José M. Arce, Catalina Martín-Cleary, Carlos Cenjor, Ángel Ramos, Alberto Ortiz

Department of Health Information Management, University Hospital Fundación Jiménez Díaz, Madrid, Spain (JMA)
Department of Nephrology, University Hospital Fundación Jiménez Díaz, Madrid, Spain (CMC, AO)
Department of Otolaryngology, University Hospital Fundación Jiménez Díaz, Madrid, Spain (CC)
Department of Otolaryngology, University Hospital Canarias, Las Palmas, Spain (AR)

OBJECTIVE: Patient choice of healthcare centers to be treated for specific diseases is compromised by the low accessibility of understandable information. Physicians are rarely involved in healthcare quality assessment, despite their potentially valuable input. The purpose of this study was to develop a methodology for evaluating the quality of care that specifically incorporates advice from medical specialists and provides accessible information for patients in search of high-quality healthcare.

MATERIALS and METHODS: A pilot Delphi study was conducted among 28 Spanish otolaryngology experts, seeking their opinion on the quality-of-care indicators and on their ability to recommend the most suitable department for the treatment of specific otolaryngologic diseases.

RESULTS: The average acceptance rate was 91.9% for quality-of-care indicator and 96.5% for the resources needed for improving the quality of care. Furthermore, 93% experts reported that patients frequently ask for physician advice on which center provides better care for a specific disease, 92.6% experts believe they could recommend the best centers for specific otolaryngologic diseases, and 80% experts agreed that expert opinion on the quality of care offered by different centers would be a valuable addition to quality-of-care assessment.

CONCLUSION: The incorporation of physician advice into healthcare quality assessment may improve the usefulness of healthcare quality indicators for patients. Assessment tools incorporating physician advice should be developed and validated.

KEYWORDS: Healthcare quality, consensus, Delphi technique

INTRODUCTION

Prior to 2002, the Spanish National Health System assigned healthcare centers to citizens based on their place of residence. In 2002, the Patient Autonomy Act recognized a patient's right to freely choose a healthcare center, hospital, family physician, or specialist, independent of their place of residence. In addition, the Act established the patient's right to receive bona fide information about healthcare centers, hospitals, and physicians on which to base their choice [1].

Today, a considerable number of patients in Spain exercise their right to choose a hospital and physician. However, information to make an informed choice is scarce, not easily accessible, and not easy to interpret for the general public. In order to fully implement the Patient Autonomy Act, methods need to be developed that objectively evaluate the quality of care and that provide information to the public in an accessible, comprehensible way.

The most common models for the quality assessment and performance management of hospitals are the European Foundation for Quality Management Model, International Standards Organization Certification, and Joint Commission Accreditation Model [2-5]. These models offer a general philosophy and ethical framework for the provision of healthcare, as well as suggestions for improving the quality of care; however, they do not provide information on the quality of care within specific medical departments. It is precisely this type of information that patients need in order to make correct informed choices regarding the best hospital or physician for their specific disease.

The goal to create a set of indicators that capture information about specific medical departments within a given healthcare center could be approached by examining patient medical records. In fact, indicators exist that use data from the minimum basic data set (MBDS). The MBDS extracts data from patient medical reports and codes it according to the International Classification of Diseases Catalog. MBDS provides specific information on the demographics, diagnostics, and procedures in each hospital. Quality-of-care in-

Corresponding Address: José M Arce E-mail: jmarce@fjd.es
Submitted: 06.10.2016 **Revision received:** 03.02.2017 **Accepted:** 21.02.2017

dicators based on MBDS data are used by the European Core Health Indicators Commission, Agency for Healthcare Research and Quality, and OECD countries [6-8]. In Spain, the Spanish Society of Quality of Healthcare and Ministry of Health use MBDS data to create quality-of-care indicators that are used to direct policy, allocate resources, or conduct economic analyzes [9, 10].

Quality-of-care indicators should not just be the starting point for hospital management strategies or public policy decisions, but they should also be developed for use by the general public, specifically when making decisions regarding medical care [11].

The objective of this pilot study is to develop a methodology for evaluating quality of care that generates more and better information for patients choosing between healthcare centers. A broader goal is to define ways in which quality of care can be improved, not just evaluated. More specifically, we seek to incorporate the expertize of physicians into the quality-of-care assessment methodology. Incorporating physician expertize into quality-of-care indicators will make the indicators useful to patients who have to choose between different healthcare centers to receive therapy for specific diseases. Upon a new diagnosis of a severe disease, many patients ask their physician where they can receive the best standard of care for the treatment of this specific disease. Thus, we incorporated physician expertize into our methodology because patients routinely seek it out in making decisions. Incorporating physician expertize into quality-of-care indicators may also make the indicators useful for assessing and improving medical care. Physicians are intimately involved in healthcare delivery, yet they are generally unfamiliar with quality-of-care indicators, both how they are developed as well as their use and value. We hypothesize that educating and involving physicians in quality-of-care management may improve departmental organization, resource utilization, and feedback to hospital managers. Playing an active role in planning and assessing the quality of care enhances physicians' professional motivation and performance [11].

As the first step toward developing a physician-based quality-of-care assessment model, we explored the physicians' attitude toward, perception of, and suggestions to build such a model. We incorporated consensus-building, since consensus will help the eventual implementation of the model. Finally, the recommendations from the Institute of Medicine regarding transparency were also incorporated [12,13]. We now report that physician perception of the model was overall positive and a majority of experts agreed on the potential benefits of incorporating physician advice into quality-of-care assessment tools, especially if these are going to be offered to patients so that they can make an informed choice between different healthcare centers for the care of specific diseases.

MATERIALS and METHODS

Study Design

The research team developed a questionnaire that was presented to a panel of national otolaryngology experts following the Delphi technique. The Delphi survey technique generates first-hand, freely expressed information, and a consensus that is free of follow-the-leader bias [14-20].

The questionnaire was answered anonymously through a Web-based survey tool. According to the Delphi technique, the study was carried out in two rounds, with a four-week interval in between rounds. A summary of the first-round responses was made available to experts during the second round. For both rounds, the estimated time for completing the questionnaire was 3 h.

The study was approved by the Institutional Scientific and Ethical Committee at IIS-Fundacion Jimenez Diaz (Madrid, Spain).

Participants

The expert panel was composed of 28 Spanish otolaryngologists, considered to be experts on the quality of care in their hospitals. Panelists were selected using the following criteria: (a) they were representatives of the main otolaryngology subspecialties and referral experts in their field, (b) they represented different Spanish regions, and (c) they had at least 10 years of work experience as otolaryngology specialists. The selection was carried out in collaboration with the Spanish Society of Otolaryngology and Cervical Facial Pathology (SEORL-PCF).

Sample Size

The SEORL-PCF provided a list of 40 otolaryngologists who met the selection criteria. We contacted them via regular mail and e-mail. Out of the 36 otolaryngologists who agreed to participate, 28 completed the questionnaire. Each specialist participated individually and anonymously. The composition of the panel was not made known to the participants.

Context of the Questionnaire

The questionnaire was divided into 3 sections. Questions from the first 2 sections were formulated as a "management game". The participant was placed in a hypothetical scenario: he/she was newly promoted to the Head of the Otolaryngology Department in a hospital of medium–to-high complexity and was asked to improve the quality of care provided by the department while maintaining the previous year's budget. In order to do this, the participant was required to initially assess the quality of care provided by the department in the previous years. The questionnaire presented a series of quality indicators, and the participant was asked to choose those that would best allow him/her to assess the quality of care. The participant was also asked to grade the importance of resource data in developing a strategy to improve quality of care.

Questions from the third section referred to a different hypothetical scenario: a family member has been diagnosed with an otolaryngologic disease and has asked the participant for advice on the best department to treat the disease. This question was repeated for different otolaryngologic diseases.

Questionnaire Structure

The questionnaire consisted of 237 questions divided into 3 groups: Group A: quality-of-care indicators (70 questions); Group B: resources for quality-of-care improvement (126 questions); and Group C: medical advice and recommendations of the most suitable department for the treatment of specific otolaryngologic diseases (41 questions). Group A: Participants were asked to grade the importance of quality-of-care indicators grouped into the following categories:

Table 1. Healthcare Quality Results. Indicators approved by a majority of experts

Response rate (Essential+Important) %		Healthcare Quality Results: ORL Criteria/Indicators Criteria/indicators with response rate (Essential+Important) >80%
Health Results	100	Severity-adjusted mortality rate
		Severity-adjusted complication rate
		Frequency distribution of complications by surgical procedure
	96.4	Mortality rate by surgical procedure
		Surgical wound infection rate
		Frequency distribution of complications
	92.9	Postoperative mortality rate (24 h)
		Frequency distribution of sentinel events
		Emergency readmission rate
Process Management Results	100	Severity-adjusted ALOS
	96.4	Wait time for access to hospital care - first consultation
		Median time between performance of biopsy and availability of results
		Median time between imaging tests request and availability of results
		Median time between inpatient interconsultation request and availability of results
	92.9	Nosocomial infection rate
		Medication error rate
		Weighted ALOS per surgical procedure (inpatient+outpatient)
		Median time between first consultation and surgery
	89.3	Postoperative hemorrhage rate
		Emergency readmission rate
	85.7	Surgical reintervention rate before discharge
	85.7	ALOS per DRG
		Outpatient/Inpatient surgery rate by procedure
	82.1	Preoperative ALOS
Cost Results	96.4	Cost per major outpatient surgery
	85.7	Cost per DRG
		Cost implants/prostheses per technique
Perceived Quality Results	92.9	Complaints/activity (%)
	85.7	Outpatients seen in consultation recommending the department (%)
	82.1	Surgical outpatients recommending the department (%)

ORL: otorhinolaryngology; ALOS: average length of stay; DRG: diagnosis related groups

treatment outcome indicators (mortality, complications, readmissions, patient safety), management and administration indicators (average length of stay, care delay, surgical management), economic indicators (procedure costs and productivity), and quality-of-care perception indicators (satisfaction surveys and patient complaints). Other issues addressed in Group A were quality standards, allowing physicians free access to their own department's healthcare quality results, allowing public access to quality-of-care information, and how often the quality-of-care information should be updated.

Group B: Participants were asked to grade the importance of the following resources for improving the quality of care: structural resources (specialized units, specialized outpatient clinics, multidisciplinary functional units), human resources (staff physicians, nurses, audiologists, speech therapists, vertigo rehabilitation therapists), organizational resources (departmental regulations, healthcare operations, training programs), complementary healthcare services within otolaryngology departments (monographic programs, educational programs), complementary healthcare services within the hospital (diagnostic support, therapeutic support), methods (clinical practice

guidelines, medical protocols, patient safety protocols), medical history quality, and information technology (telemedicine).

Group C: The questions in this group were aimed at the following: (a) evaluating the participant's capacity to recommend the otolaryngology department providing the highest quality of care for the treatment of diverse otolaryngologic diseases, (b) discerning between an otolaryngology department's perceived reputation and public image and the quality of care it provides, and (c) suggesting the most suitable otolaryngology departments to treat various otolaryngologic diseases.

Assessment Scales

Likert-type scales with 5 possible responses were used for most questions in Groups A and B. Specific scales were used when generic scales were considered inappropriate.

The possible responses for Group A questions were "Essential, Important, Unnecessary, Confusing, and Do not know." The possible responses for Group B questions were "Very important, Quite important, Of little importance, Not important, and Do not know." All the questions included space to write in free-text comments. Some questions were open-ended.

Participants were asked to grade each group of indicators in the questions in Groups A and B from 0 (not related) to 10 (highly related) according to how closely they thought the indicator was related to quality of care.

Statistical Analysis

Data were collected and statistically processed using R: A Language and Environment for Statistical Computing (R Core Team, R Foundation for Statistical Computing, Vienna, Austria). Only criteria or proposals accepted by a majority of the expert panel would be included in the final model.

For questions with a single possible response, we calculated the percentage of responders for each response. For questions with multiple possible responses, we calculated the percentage of participants that selected each response.

Results grading the indicators from 0 to 10 were summarized using means and medians.

RESULTS

Participation was satisfactory: 80.6% (29/36) of the participants started and 96.6% (28/29) of these completed the questionnaire.

In the first round, the response rate was 100% for questions in Group A, 99.9% for Group B, and 89.8% for Group C. In the second round, 75% (21/28) experts modified at least 1 response. Each participant modified 4.8% responses in the second round, which represents a mean of 10.3 changes for each participant.

Group A (quality-of-care indicators)

For the sake of clarity, the 5 responses "Essential, Important, Unnecessary, Confusing, and Do not know" were grouped as follows: "Essential and Important", "Unnecessary and Confusing", and "Do not know". In this case, 91.9% (57/62) of the indicators were accepted by a majority of the participants as "Essential and Important", with an average acceptance rate for these indicators as 80.6%. The results of Group A questions are summarized in Table 1.

It is noteworthy that 96.4% experts believe that it is essential or important that all the physicians in the department have access to quality-of-care information, and 67.9% experts think it is necessary for quality-of-care information to be available to other departments within the same hospital. Further, 57.1% participants believe it is essential or important that the general public have access to quality-of-care information, and the information on positive outcomes should be presented rather than the information on negative outcomes. Furthermore, 71.4% experts believe that quality-of-care information should be updated 4 times per year.

The experts graded the following indicators as the most accurate in representing the quality of care: rate of complications, patient safety, and mortality (Table 2).

Further, 72% experts chose the national and European standards to measure quality-of-care results in their department.

Table 2. Healthcare Quality Indicators. Results grading the categories of indicators

Healthcare Quality Results: Categories of Criteria/Indicators		Mean	Median
Treatment outcome indicators	Mortality	8.0	9
	Complications	9.1	10
	Readmissions	7.1	7.5
	Patient safety	8.6	9
Management and administration indicators	Average length of stay	6.3	6
	Care delay	7.2	7
	Surgical management	7.2	8
Economic indicators	Procedure costs	6.9	7.5
	Productivity	6.9	7.5
Quality of care perception indicators	Satisfaction surveys	7.5	8
	Patient complaints	7.5	8

Results grading the categories indicators from 0 to 10 (0=not related; 10=highly related)

Table 3. Healthcare Quality Resources approved by a majority of experts

Response rate (Very Important+Quite Important) %		Healthcare Quality Resources Criteria/indicators with response rate (Very Important+Quite Important) >90%)
Structural Resources	100	Specialized Units in Otology; Laryngology
		Multidisciplinary Unit in Cervicofacial Cancer Surgery
	96.4	Multidisciplinary Otoneurology Unit
		Specialized Unit in Rhinology
	92.9	Specialized Consultation in Voice care
Human Resources	100	Level of job satisfaction improves quality of healthcare for medical staff
		Choosing incentives and motivational tools increase job satisfaction for medical staff
	96.4	Requisite on minimum years' experience and knowledge for technicians
Organizational Resources	100	Transparent hiring procedures
	96.4	Well defined job descriptions for physicians
		Clear organizational chart for the department
		Transparent criteria regarding assignment of tasks and workload to physicians
		Rules and guidelines for clinical lectures
		Internship and residency program curriculum implementation
	92.9	Public admission requirements for physician training programs
		Development of emergency care and severe disease protocols
Complementary Healthcare Services	100	Educational programs for laryngectomised patients and their caregivers
		Phoniatric rehabilitation programs
		PET-CT scanning for cancer patients
		Protocols for coordinating ORL and Emergency Room Department care
	96.4	Pathologist specialized in ORL
		Protocols for coordinating ORL and ICU care
	92.9	Educational programs for patients with vertigo and their caregivers
		Protocols for coordinating ORL and Internal Medicine Department care
		Protocols for coordinating ORL and Primary Healthcare Center care
Methods for Development, Implementation and Monitoring	100	Protocols for venous thromboembolism prophylaxis; pain management
		Protocols for hand washing and prevention of nosocomial infections
	96.4	Antimicrobial prophylaxis protocol
		Continuity of care protocol per pathology
		Medical reports with diagnosis, treatment and recommendations of care
	92.2	Clinical guidelines for the most common diseases
		High-risk medicines management protocol
		Surgical safety checklist
		Protocol for the prevention of ORL procedures complications
Information Technology Resources	100	Detailed medical report at hospital discharge
		Detailed surgical report
		Detailed medical orders for post-operative care
		Online medical documents
	96.4	Detailed medical report at each consultation

PET-CT: positron emission tomography - computed tomography; ORL: otorhinolaryngology; ICU: intensive care unit

Table 4. Healthcare Quality Resources. Results grading the importance of resources

Healthcare Quality Resources		Mean	Median
Structural resources	Specialized units, specialized outpatient clinics, Multidisciplinary functional units	8.0	8
Human resources (experience and level of job satisfaction)	Staff Physicians	9.0	10
	Nurses, audiologists, speech therapists, vertigo rehabilitation therapists	8.5	9
Organizational resources	Department regulations	8.2	8
Complementary health care services within Otolaryngology departments	Monographic programs, educational programs	7.0	7
Complementary health care services within the hospital	Diagnostic support, therapeutic support	6.7	7
Methods	Clinical practice guidelines, medical protocols, patient safety protocols	7.8	8
Medical history	Medical reports	8.6	9
Information technology	Telemedicine	7.4	8

Results grading the categories indicators from 0 to 10 (0=not related; 10=highly related)

Table 5. Percentage of experts who could recommend the most suitable department for the treatment of specific otorhinolaryngology diseases

Percentage of experts	ORL disease
100	Acoustic neuroma
	Cerebrospinal fluid fistula
	Ethmoid sinus adenocarcinoma
	Laryngeal cancer
	Second branchial cleft cyst or lateral cervical cyst
96.4	Paraganglioneuroma
	Cochlear implant
	Laryngeal dystonia
	Mucoepidermoid carcinoma of the parotid gland
	Vertigo
92.9	Lateral tongue epidermoid carcinoma
	Thyroid cancer
89.3	Facial paralysis
82.1	OSAS. Soft palate surgery
	Choanal atresia
60.7	Facial polytraumatism

ORL: otorhinolaryngology; OSAS: Obstructive sleep apnea syndrome

Group B (resources for quality-of-care improvement)
In this case, 96.5% (84/87) resources for quality-of-care improvement were considered "Very Important or Quite Important" by a majority of the participants. The average acceptance rate was 90.5%. The results of Group B questions are summarized in Table 3.

The experts believe that the following resources contribute the most toward quality-of-care improvement strategies: the experience and the level of job satisfaction of the specialists in the department, nursing staff, and quality of the medical history (Table 4).

Further, 96.4% experts believe it is useful to have access to information on available resources for improving the quality of care.

Group C (medical advice and recommendations of the most suitable department for treatment of specific otolaryngology diseases)
In this case, 92.9% experts believe that it is very common for patients or family members to ask the specialist for advice on where to treat their specific disease. Further, 65.4% experts believe that even if transparent and understandable quality-of-care information were available, patients would still value the specialist recommendation over the publicly available information. Moreover, 96.4% experts admitted to asking another physician for guidance as to which healthcare center provides the highest quality of care for a specific disease that the expert or their family members might have. Further, 46.5% experts would search for additional information through published quality-of-care information or would research the department or specialist publications.

For the 16 different diseases discussed, 92.6% experts believe that they would be capable of recommending an otolaryngology department (Table 5).

It was agreed by 82.1% experts that there is a tight relationship between the public image of a department and the quality of care it provides. Further, 80% experts agreed on the value of conducting a survey to assess which centers would medical specialists recommend to patients seeking care for specific diseases, both because it would stimulate the delivery of higher-quality care and because it would provide useful information to patients.

DISCUSSION

The main findings of the study are that a consensus was reached by otolaryngology experts on quality-of-care indicators, resources needed for improving the quality of care, and potential contribution of physician's expert opinion on the quality of care offered by different centers.

Physician perception of the model was overall positive and a majority of experts agreed on the potential benefits of incorporating physician

advice into quality-of-care assessment tools, especially if these are going to be offered to patients so that they can make an informed choice between different healthcare centers for the care of specific diseases.

Our study has several advantages: it includes features specific to the type of the department it assesses; it evaluates areas such as structural assets, human resources, and organizational methods, which are often neglected in quality-of-care models; and it accounts for the economic constraints of the current financial crisis as it seeks to optimize the available resources without incurring additional costs.

The Delphi technique allows the study to be anonymous, avoiding conflict between participants and achieving the highest level of veracity in their responses. The Delphi technique is useful for gathering in-depth expert opinion and for reaching a consensus. We believe consensus is the key to enacting long-lasting change. Thus, our model is particularly well suited to addressing how to improve the quality of care, something which will unavoidably involve change.

The aim of our study was to develop a methodology for evaluating the quality of care that generates accessible yet high-quality information for patients choosing between different healthcare centers in order to be treated for a specific disease and that specifically incorporates the expertize of specialists.

Overall, the experts agreed with the items selected for the quality-of-care assessment: there was consensus around 96.5% resources for quality-of-care improvement. Thus, consensus was reached on a wide range of items, thereby facilitating the implementation of a specialty-specific quality-of-care tool that may be helpful to healthcare planners, managers, physicians, and patients.

That fact that 92.9% experts agreed that it is highly common for patients to ask the specialist for advice on where to treat their disease and the fact that 96.4% experts themselves had used such advice from a colleague supports the inclusion of specialist expertize in quality-of-care indicators that are made available to the general public. In this regard, 92.6% experts could recommend the best department to treat a specific otolaryngology disease.

Another finding is that 82.1% experts believe there is a tight relationship between the reputation of a department and the quality of care it delivers. There is an opportunity to develop national specialist opinion surveys that would provide factual, statistically sound evaluation of a departmental reputation. In the eyes of the general public, the advice of a group of specialists may be at least as valuable as that of a single specialist whom they know personally.

Participation in the study was high: 96.6% experts completed the lengthy questionnaire. No doubt the Web-based survey platform contributed toward the high participation as it allowed the experts to work entirely at their convenience. However, such a high rate of participation also supports the interest of specialists in evaluating and improving the quality of care. Involving specialists will enhance their professional performance, thereby directly improving the quality of care in their department and indirectly improving it, too, via better organization, resource utilization, and feedback to hospital managers.

Among the study limitations, it may not be possible to extrapolate the results of this study to other geographical areas, countries, organizations, type of hospitals, or medical specialties. There may also be limitations created by the choice of expert panel.

In conclusion, our novel approach, centered on the expertize of specialists, led to a wide consensus on the selection of items to evaluate and improve the quality of care. This approach may be useful both to patients choosing between healthcare centers and to physicians working within a department to improve the quality of delivered care.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of IIS-Fundacion Jimenez Diaz (Madrid, Spain).

Informed Consent: Written informed consent was obtained from who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - J.M.A.; Design - J.M.A., C.M.C.; Supervision - C.C., A.O.; Resources - C.C., A.O.; Materials - J.M.A., C.M.C.; Data Collection and/or Processing - J.M.A., C.M.C.; Analysis and/or Interpretation - J.M.A., C.M.C., C.C., A.O., A.R.; Literature Search - J.M.A., C.M.C., C.C.; Writing Manuscript - J.M.A., C.M.C.; Critical Review - C.C., A.O., A.R.

Acknowledgements: The authors would like to thank Marta García, Mercedes Guerra, Caroline Hall, Luis Miguel Molinero and Ricard Rosique for their significant contribution to the study, and the Spanish Society of Otolaryngology and Cervical Facial Pathology for their valuable scientific support. Special thanks to Elisa Martin for her insight and generous help with the writing of this article.

The authors would also like to express their gratitude to the otolaryngologists for their disinterested collaboration: Francisco Antolí-Candela Cano, Miguel Ángel Arístegui Ruiz, Manuel Bernal Sprekelsen, Ignacio Cobeta Marco, Carlos Escobar Sánchez, Francisco Esteban Ortega, Mario Fernández Fernández, Enrique Fernández Julián, Ferrán Ferrán Vila, Raimundo Gutiérrez Fonseca, María José Hernández García, María José Lavilla Martín de Valmaseda, Cristobal López-Cortijo Gómez de Salazar, Jaime Marco Algarra, Humbert Massegur Solench, Constantino Morera Pérez, Primitivo Ortega del Álamo, Nicolás Pérez Fernández, Herminio Pérez Garrigues, Guilllermo Plaza Mayor, Miquel Quer i Agustí, Jaime Sanabria Brassart, Bartolomé Scola Yurrita, Andrés Soto Varela, Carlos Suárez Nieto, Manuel David Tomás Barberán, Héctor Vallés Varela, Isabel Vilaseca González.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: This study was supported by the IIS-Fundacion Jimenez Diaz (Madrid, Spain).

REFERENCES

1. Ley 41/2002, de 14 de noviembre, básica reguladora de la autonomía del paciente y de derechos y obligaciones en materia de información y documentación clínica. BOE núm. 274 de 15 de noviembre de 2002. Available from: www.boe.es/diario_boe/txt.php?id=BOE-A-2002-22188 (Accessed January 12th, 2014).
2. The EFQM Excellence Model. Available at http://www.efqm.org/the-efqm-excellence-model. (Accessed January 12th, 2014).
3. Ministerio de Administraciones Públicas. Guía de Autoevaluación para la Administración Pública. Modelo EFQM de Excelencia, 2006. Available from: http://aeval.es/comun/pdf/Guia_EFQM_corta_04_06.pdf (Accessed January 12th, 2014).

4. The International Standards Organization Committee. Available from: http://www.iso.org/iso/home/standards.htm (Accessed January 12th, 2014).
5. The Joint Commission. Hospital Accreditation. Available from: http://www.jointcommission.org/accreditation/hospitals.aspx (Accessed: January 12th, 2014).
6. Agency for Healthcare Research and Quality. Quality Indicators. Available from: http://www.qualityindicators.ahrg.gov/ (Accessed: January 12th, 2014).
7. García-Armesto S, Kelley E, Klazinga N, Wei L. Claves y retos en la comparación internacional de la seguridad del paciente: la experiencia del Health Care Quality Indicators Project de la OCDE. Rev Calidad Asistencial 2007; 22: 327-34. [CrossRef]
8. OECD. Health Care Quality Indicators. Available from: http://www.oecd.org/els/health-systems/health-care-quality-indicators.htm (Accessed: January 12th, 2014).
9. Sociedad Española de Calidad Asistencial. Indicadores de Calidad para Hospitales del Sistema Nacional de Salud. Marzo 2012. Available from: http://www.calidadasistencial.es/images/gestion/biblioteca/335.pdf (Accessed: January 12th, 2014).
10. Ministerio de Sanidad, Servicios Sociales e Igualdad. Indicadores y Ejes de Análisis del CMBD. Aplicación para el análisis y explotación del registro de altas hospitalarias. Available from: http://icmbd.mspsi.es/icmbd/login-success.do (Accessed: January 12th, 2014).
11. Nelson MF, Merriman CS, Magnusson PT, Thomassian KV, Strawn A, Martin J. Creating a Physician-Led Quality Imperative. Am J Med Qual 2014; 29: 508-16. [CrossRef]
12. Institute of Medicine. Medicare: A Strategy for Quality Assurance, Volume I and II. Washington DC: The National Academies Press, 2001.
13. Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington DC: The National Academies Press, 2001.
14. Brown BB. Delphi process: A Methodology used for the Elicitation of Opinion of Experts. The Rand Corporation, Santa Monica, California, February 1968.
15. Linstone HA, Turoff M, Helmer O. The Delphi Method. Techniques and Applications. 2002. Available from: http://is.njit.edu/pubs/delphibook.pdf (Accessed: January 12th, 2014).
16. Shull MJ, Guttmann A, Leaver CA, Vermeulen M, Hatcher CM, Rowe BH, et al. Prioritizing performance measurement for emergency department care: consensus or evidence-based quality of care indicators. CEJM 2011; 13: 300-9. [CrossRef]
17. Hearnshaw HM, Harker RM, Cheater FM, Baker RH, Grimshaw GM. Expert consensus on the desirable characteristics of review criteria for improvement of health care quality. Qual Health Care 2001; 10: 173-8. [CrossRef]
18. Fink A, Kosecoff J, Chassin M, Brook RH. Consensus methods: characteristicsand guidelines for use. Am J Public Health 1984; 74: 979-83. [CrossRef]
19. Jones J, Hunter D. Consensus methods for medical and health services research. BMJ 1995; 311: 376-80. [CrossRef]
20. Boulkedid R, Abdoul H, Loustau M, Sibony O, Alberti C. Using and Reporting the Delphi Method for Selecting Healthcare Quality Indicators: A Systematic Review. PLoS One 2011; 6: e20476. [CrossRef]