

Contribution of a Healthcare Quality Program to the Development of an Institute for the Clinical Management of the Musculoskeletal System

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In 1999, the Institute for the Musculoskeletal System (ICAL) was established in Barcelona's *Hospital Clínic* as an institution entrusted with the organization of the orthopedic and trauma surgery, rheumatology and rehabilitation services offered by the Hospital. At the same time, with a view to making sure that the change was as smooth as possible, a specific quality assurance scheme was implemented, whereby a series of improvements were identified as necessary, which had to be made within one calendar year, and a series of both technical and perceived quality indicators were identified for monitoring. The results obtained in the last five years show that there has been an improvement in most of the indicators (except those related to surgical infections and voluntary discharges), contributing to the strengthening and the prestige of this innovative Institute devoted to the management of musculoskeletal conditions, which makes the patient the focus of the healthcare effort and the physician the mainstay of clinical management.

Key words: *clinical management, quality assurance plan, musculoskeletal system.*

Contribución de un programa de calidad asistencial al desarrollo de un Instituto de Gestión Clínica del Aparato Locomotor

En el año 1999 se constituye en el Hospital Clínic de Barcelona, el Instituto del Aparato Locomotor (ICAL), agrupación organizativa de los Servicios de Cirugía Ortopédica y Traumatología, Reumatología y Rehabilitación. Al mismo tiempo, y con el objetivo de asegurar la calidad de este proceso de cambio, se diseñó un programa de calidad específico, en el que se definían objetivos de mejora a conseguir en un año natural y se monitorizaban una serie de indicadores de calidad, tanto técnica como percibida. Los resultados de estos últimos 5 años nos indican que se ha observado una mejora en la mayoría de indicadores (exceptuando los relativos a las infecciones quirúrgicas y las altas voluntarias), contribuyendo a la consolidación y el reconocimiento de este proyecto innovador en el Instituto de Gestión Asistencial de las Enfermedades del Aparato Locomotor, que sitúa al enfermo en el epicentro de la organización y a los médicos como auténticos gestores del mismo.

Palabras clave: *gestión clínica, plan de calidad, aparato locomotor.*

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Received: October 2006.

Accepted: May 2007.

In 1998 the *Clinic* University Hospital of Barcelona began a process of internal, global, and progressive reorganization, adopting a decentralized model of clinical management structured on the basis of grouping patients according to their pathology.

On 12th July 1999, the center's Medical Board sanctioned the organizational project of the Clinical Institute of the Musculoskeletal System (Instituto Clínic del Aparato Locomotor or ICAL), which includes Orthopedic and Trauma, Rheumatology, and Rehabilitation Services.

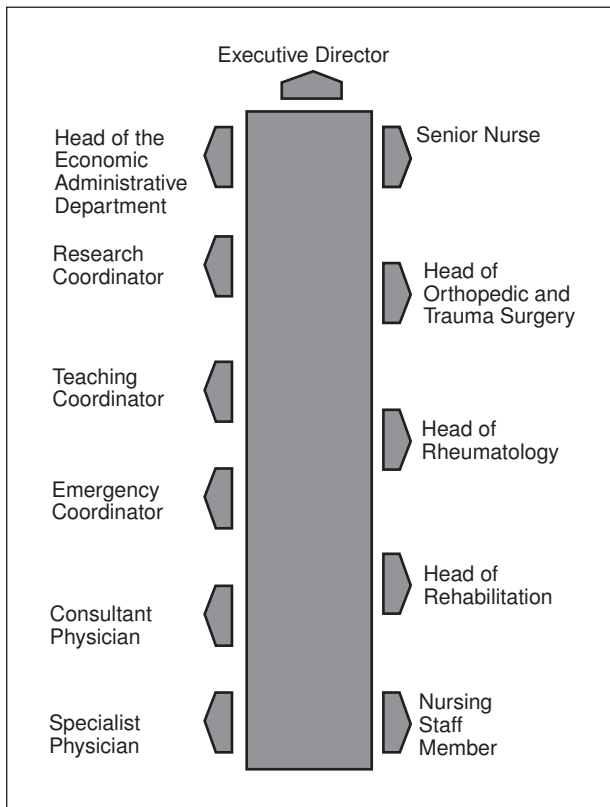


Figure 1. Members of the Management Committee of Orthopedic and Trauma Surgery

Thus the ICAL embarked on its orientation as an clinical management institute, being presided over by an Assistant Director appointed by the Center's Managing Director, following a previous nomination by the institute's Management Committee (fig. 1). The Assistant Director is aided in

his managing task by a Senior Nurse and by the Head of the Economic Administrative Department (fig. 2). The institute's management is completely autonomous; it is in charge of administering a budget assigned to meet certain specific objectives and which enables the institute both develop and set up innovative techniques as well as attract new clients.

One of the strategic aims of ICAL was the acquisition and development of a culture based on the continuous improvement of healthcare processes, with a view to contributing towards a deeper knowledge of the quality evolving methodology for the care of musculoskeletal conditions.

The main aim of this study is to describe the work dynamics used, and to present the evolution of the results obtained in this innovative experience in healthcare management.

MATERIALS AND METHODS

The design of this work is based on a descriptive epidemiological study with temporal series, which was carried out in the Musculoskeletal System Institute in Barcelona's Clinic University.

We made up a task-force—an interdisciplinary group carrying out a specific task—in which various professional levels were represented, both from ICAL and from the Quality Assurance Program of the center. Technical quality indicators that were found to be of interest were selected, and a consensus was reached regarding those quality assurance aims that were thought to be of first concern for the strategic policies of the Musculoskeletal System Institute. These aims are revised yearly.

It was established that there would be at least one goal concerning quality in each one of the departments that make

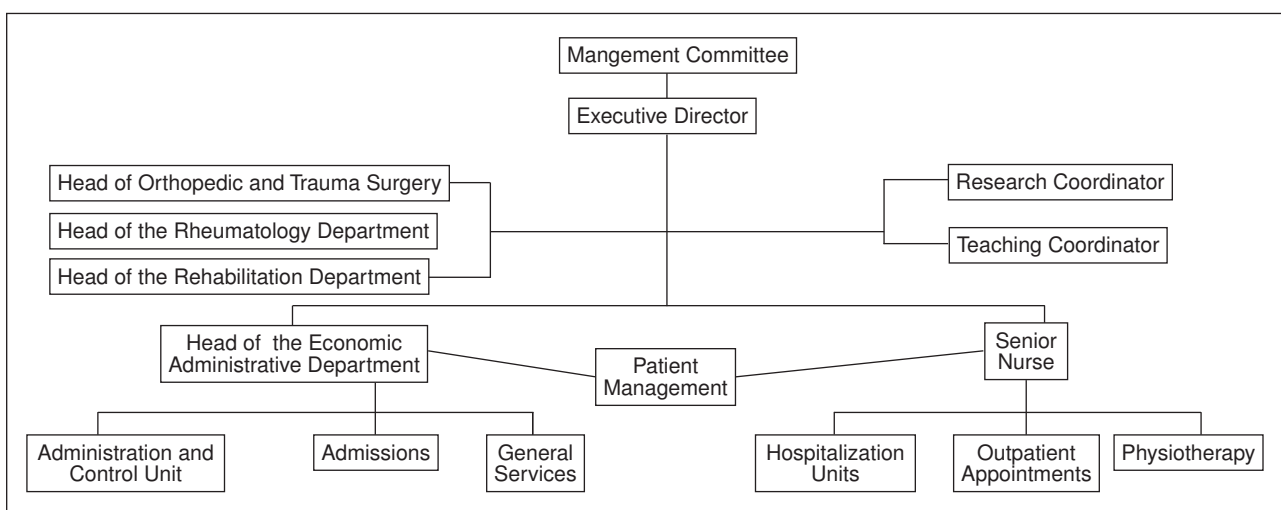


Figure 2. Organizational Structure: Orthopedic and Trauma Surgery.

Table 1. Monitored indicators in the Quality Assurance Plan of the *Clinic* University Hospital

Readmission < 31 days
Mean pre-op stay in elective surgery
Deferred surgical procedures (%)
Surgical infections (%)
Mortality
Falls in hospitalized patients (%)
Pressure ulcers (%)
Discharge against medical advice
Complaints
Complaints response time
Evaluation by hospitalized user

up the institute, that the approval of these goals would be the result of an agreement between the institute and the Hospital's Board of Directors, and that they should have an awareness-raising effect on all the Institute's professionals regarding the importance to have a methodology to improve quality assurance, especially in those areas where the need for improvement was apparent.

The indicators that would serve the purpose of monitoring the basic quality criteria¹ were initially those that had been defined in the Hospital Quality Assurance Plan (Table

1), which would be extended when new indicators were considered or suggested as a result of a process-generated dynamics.

The agreement regarding objectives is registered in the quality dossier², a document that gathers all the information concerning quality assessment in the institute. The quality dossier is a vehicle of communication between the institute and the Board of Directors that serves the purpose of monitoring the evolution of goals and indicators throughout the year.

RESULTS

Table 2 presents the evolution of the various technical quality indicators for the period 2001-2005. It may be observed that the overall tendency of the indicators in these 5 years was positive, except for the percentage of surgical infection, which underwent an unfavorable evolution at the end of the period considered.

Table 3 shows the evolution of the different quality indicators observed for the period 2001-2005. It can be seen that the tendency was more markedly heterogeneous in this group, that the users' feedback was more positive and that

Table 2. Evolution of technical quality indicators

Indicator	2001	2002	2003	2004	2005
Readmissions < 31 days (%)	3.80	3.98	3.57	4.14	3.7
Mean pre-op stay in elective surgery	0.96	1.03	0.89	0.7	0.7
Deferred surgical procedures (%)	1.01	0.45	0.37	0.23	0.22
Surgical infections (%)	3.34	4.48	3.15	3.36	4.74
Mortality (%)	1.75	1.85	1.97	0.65	0.75
Falls in hospitalized patients (%)	4.5	3.8	3.7	2.10	3.7
Pressure ulcers (%)	12	4,3	6.2	5.7	7.3

Table 3. Evolution of perceived quality indicators

Indicator	2001	2002	2003	2004	2005
Discharges against medical advice (%)	1.81	1.84	2.32	0.71	2.39
Complaints (%)	1.85	2.37	4.31	3.71	2.43
Complaint response time (median)	12	8	7.5	11.5	12
Evaluation by hospitalized user	8.3	8.43	8.62	8.45	8.57

Table 4. Evolution of healthcare activity indicators

Indicator	2001	2002	2003	2004	2005
Total admissions	2,686	2,710	2,576	3,677	4,020
Mean hospital stay	7.35	7.03	6.81	5.89	7
First outpatient appointments	11,823	12,036	10,100	8,677	10,044
Total outpatient appointments	41,574	41,857	36,752	35,650	41,703
Complexity (mean relative weight)	1.43	1.48	1.43	1.42	1.51
Occupancy (%)	98.12	98.55	106.06	96.97	103.03

there was an increase in both the rate of complaints and of discharges against medical advice.

Due to the fact that some of these indicators are influenced by the level of healthcare activity, the data in Table 4 correspond only to the period in question. In Table 5, we show the evolution of technical and perceived quality aims for the period 2001-2005.

DISCUSSION

Any kind of organizational change entails the need for professionals to adapt to the new situation. Ensuring that quality is not negatively affected in this period of change as well as in the succeeding stages is one of the basic complications to be taken into account when working to consolidate organizational changes^{2,3}.

In our case, the organizational change—whose goals involved providing the patient with better care and improving global efficiency—was structured around a series of clinical guidelines that were produced and written by the near totality of the professionals involved in the treatment of a certain group of illnesses^{4,5}.

The results obtained are proof of the fact that the changes we carried out did not deteriorate adequate care quality parameters; rather, they have stabilized acceptable standards and given rise to a positive work dynamics as well as to continuous improvement.

The balance that needs to be achieved between mean hospital stay, readmissions of less than 31 days, and assisted patient complexity—together with their interrelation with other indicators—makes manifest the fulfillment of the social function that is inherent in all clinical management institutes⁶, and which should also be considered in this case. Thus, for instance, the increase in surgical infection in 2005 can be accounted for by the parallel increase of complexity and by the generalization of complex surgical treatment in older age groups.

Another of the features of this model is that it is endowed with surveillance systems that periodically register risky patient situations, as is the case of surgical infections, pressure ulcers or falls in hospitalized patients^{7,8}; in this way the institute takes part and actively cooperates in activities of a more transverse and general nature in the hospital.

The patient's central role, which is the real focus of the model, simultaneously with his increasingly active participation in health care concerns, reinforces the need to gain information of his opinion about the care he receives. Because of this, annual feedback surveys are carried out, both for hospitalized patients^{9,10} and for outpatients. The evolution of this feedback tells as which items want improvement and which are covered to a satisfactory standard (figs. 3-6). Also, the analysis of complaints and their examination in terms of healthcare activity rates (admissions and outpatient appointments) enables the identification of problems as well as the suggestion of possible improvement measures^{11,12}.

Table 5. Evolution of technical and perceived quality aims

Indicator	2001	2002	2003	2004	2005
Number of technical quality goals	4	4	4	6	4
Number of perceived quality goals	3	3	3	4	8
Total	7	7	7	10	12
Percentage of achieved goals	100%	100%	100%	60%	42%

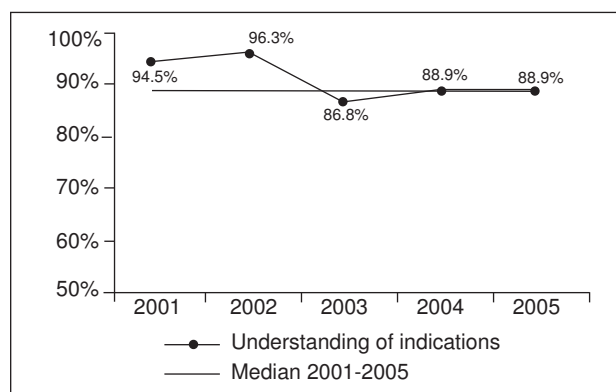


Figure 3. Hospitalization Opinion Survey Indicator (I). Percentage of clients who understood medical indications regarding their condition.

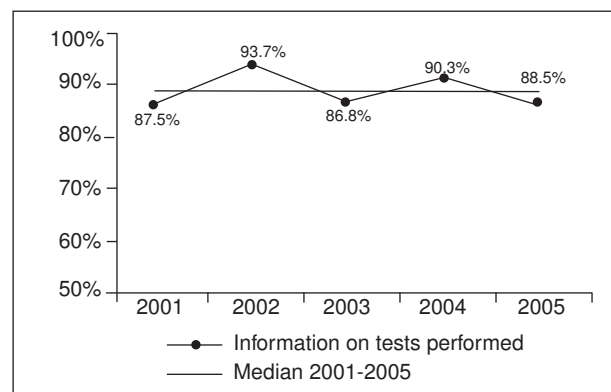


Figure 4. Hospitalization Opinion Survey Indicator (II). Percentage of clients satisfactorily informed about tests they underwent.

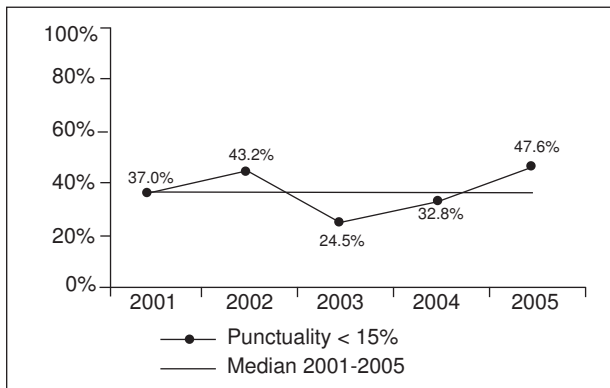


Figure 5. Outpatient appointment opinion survey indicator (I). Percentage of clients that consider they were visited in 15 minutes or less.

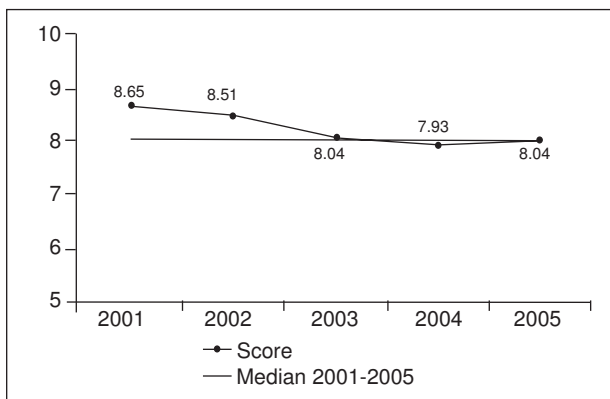


Figure 6. Outpatient appointment opinion survey indicator (II). General valuation of the service patients received (from 0 to 10).

Owing to the difficulty inherent in obtaining reference standards with which to compare our results¹³, we analyze the evolution of the institute's indicators corresponding to one year in relation to those of the previous year, and we also observe the evolutionary tendency during the last 5 years. In addition, we estimate a reference value, i.e. the epidemiological median, which is obtained from the cases treated in the last 5 years (values in bold type in Table 2). This reference value acts as a warning in those cases in which the value for the current year exceeds the habitual reference value or shows an unfavorable evolution.

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Conflict of interests

The authors have declared that they have no conflict of interests.