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Major ambulatory surgery and clinical pathways: A stimulating combination

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ABSTRACT

The success of major ambulatory surgery (MAS) in Spain is due to the need to shorten the surgical waiting list for procedures of low to medium complexity, and the efficiency, satisfaction and safety that it can obtain. Clinical Pathways (CP) are defined health care plans, supported by scientific evidence, prepared for specific environments, on “Clinical Processes” with a predictable clinical course, high prevalence and variability. The sequence of all the activities are set out in detail in them, as well as checking the performance of the professionals involved.

MAS is performed using strict protocols and coordination between different specialties and health care levels. If CPs have demonstrated their usefulness in elective surgery, it could be assumed that the contribution of CPs could be equally applied to MAS procedures. In this article, we review the methodology for introducing CP into MAS, as well as its obstacles and expectations.

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Cirugía mayor ambulatoria y vías clínicas: una asociación estimulante

RESUMEN

El éxito de la cirugía mayor ambulatoria (CMA) en España se debe a la necesidad de atender la lista de espera quirúrgica para procesos de baja o media complejidad y la eficiencia, satisfacción y seguridad que puede conseguir. Las vías clínicas (VC) son planes asistenciales definidos, sustentados en la evidencia científica, realizadas para entornos específicos, sobre «procesos clínicos» de curso clínico predecible, elevada prevalencia y variabilidad. En ellas se detalla la secuencia de todas las actividades, así como la verificación de las actuaciones de los profesionales afectados.

Palabras clave:

Gestión clínica

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La CMA se desarrolla con un elevado grado de protocolización y coordinación entre diferentes especialidades y estamentos sanitarios. Si en cirugía programada las VC han demostrado su utilidad, es de suponer que en procedimientos de CMA, la aportación de las VC pueda ser igualmente aplicada. En este artículo revisamos la metodología de implementación de VC en CMA así como sus reticencias y expectativas.

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Clinical management and MAS

Increasing health costs contributes one of the main problems for the Spanish health system. This is mainly caused by growing needs due to an aging population, continual technological innovations and, also, excessive clinical practice variability (CPV). This problem affects all of the western world, and as such, the prestigious journal *Annals of Surgery*¹ estimates that from now until 2025 health costs will increase by 50%. Another two factors that must be added to this are that professionals are becoming demotivated and the health system's users unsatisfied. Some Spanish politicians believe that, in view of this situation, healthcare funding and rendering of services should be two separate matters, gradually making healthcare centres more independent, and giving the public more freedom when choosing health centres or professionals. In short, this would aim to stimulate regulated competition. Therefore, expert attitude is based on encouraging professionals to reduce unwarranted clinical variability and put a halt to wasting resources. This is essentially the basis of clinical management, which attempts to make healthcare professionals responsible for managing the resources that they use when attending patients.

Clinical management aims to optimise healthcare quality but control costs at the same time. This can be achieved by reducing undesired clinical practice variability (CPV), which consists of groups of patients with similar characteristics receiving different healthcare. CPV can be reduced by finding the best information available (scientific evidence), removing everything that does not contribute positively to the clinical processes and by reaching a consensus among professionals (scientific associations; clinical practice guidelines). All of this can be achieved by managing processes, and creating and using clinical pathways (CP).²

We understand "process" to be a group of related and sequential activities that convert inputs into outputs, producing an added-value. Process management is the methodology needed to assess processes using indicators (quantitative evaluation of whether a given criterion has been fulfilled), and standards (level required for indicator to be fulfilled), allowing them to be continually improved using quality cycles (planning, doing, checking, adjusting). Willpower and effort are combined to manage processes, allowing savings to be made, the organisation's image to be improved, and clients' needs and expectations to be fully satisfied.

So that processes can be managed, each healthcare unit must create a portfolio, specifying the services that it is to provide to the public as well as the service contracting authorities. The portfolio must include information about the unit's most important healthcare processes (known as *carta*

de servicios in Spain) and should state quality levels (clinical results) and the amount of resources used (average stay, waiting list delays, etc.). These units should also evaluate the results from a clinical (effectiveness and efficiency) and patient point of view (quality of life, perceived satisfaction and quality by means of surveys). Clinical management does not mean creating more units or institutes, nor does it require recognition from official bodies (i.e. ISO, EFQM, etc.). This work method encourages professionals, places the unit in the professional context and prepares it to face greater levels of independence in the future. Clinical management will be reassessed as and when quality requirements (effectiveness and efficiency) become more important to the public.²

More specifically, within major ambulatory surgery (MAS) we could group together the MAS Unit's (MASU)³ most important quality indicators into: 1) Efficiency and scientific and technological quality indicators (cancelling procedures, adverse events, including: unplanned reintervention on the same day, unplanned overnight stay, emergency appointment, hospital readmissions, and rate of risk-adjusted complications); 2) System efficiency indicators (process substitution index, outpatients index; and 3) Quality indicators perceived by MASU user (satisfaction index).³

Major ambulatory surgery emerged in Spain during the 1990s and has gradually developed during the past decade. The success of MAS in Spain has come hand in hand with the need to attend the immense surgical waiting list for procedures of low to medium complexity, and the efficiency, satisfaction, and safety that it can obtain without having to admit the patient to hospital.⁴ Furthermore, we will discuss if clinical pathways are suitable and how they can coexist in MAS.

Clinical pathways and MAS

Clinical Pathways (CP) are defined health care plans, supported by scientific evidence and prepared for specific environments, on "Clinical Processes" with a predictable clinical course, high prevalence, and variability. They involve numerous professionals and use a high level of resources. They detail the order in which all the activities take place, and check all of the actions (predetermined) that are carried out by the professionals involved. By evaluating the results obtained, corrective measures can be established. CPs represent a way of adapting clinical practice guidelines, or protocols, to clinical practice, and are the working version of clinical guidelines. Guidelines or protocols define the type of care and/or assistance that the patient is to receive, whereas pathways specify when, how and in what order the care and/or assistance is to be provided and also detail the objectives belonging to each stage.^{5,6}

CPs benefit all parties involved: patients, professionals and the authorities. Patients are better informed, meaning that their perception of quality improves. Clinical processes are simplified for professionals, meaning that they are able to obtain better results and are protected from legal action. And lastly, they are positive for the authorities because more efficient processes mean that less complaints are received and they encourage better coordination between the departments and with primary care.² Meanwhile, they are also useful for training and research purposes. Surgical procedures are particularly suitable for developing a CP. CPs have mostly been established for processes that include a surgical intervention. This is logical, given that for many of these processes, the course of events can be predicted quite accurately.

In line with the information given by Quecedo and Gilsanz,⁷ clinical pathways have been incorporated in major ambulatory surgery to standardise its processes. It is a valuable tool for reducing unexpected admissions due to pain, nausea or vomiting, and other effects, and for introducing fast-track surgery, optimising efficiency of intraoperative procedures, keeping down costs, and minimising doctor and nurse interventions. All of this is achieved, without the current risk of converting MUSA into a mechanised service chain which more than likely lose focus on the patient while trying to achieve greater economic efficiency. Furthermore, CPs contribute to and endorse the current tendency to incorporate more complex processes and high-risk patients with associated morbidity into the MUSA's service portfolio.

Implementing clinical pathways

CPs are developed over a series of stages:

1) Identify a process with clinical practice variability; 2) Organise the team of people involved in the process; 3) Clarify

and simplify the process, examining how the different stages of the same process are interlinked, limiting the time that each stage takes to a minimum; 4) Define the standards which indicate how and when diagnostic tests and treatments should be used; 5) Propose and plan improvements, informing the hospital staff the role that each professional has in each part of the process; 6) Reduce the number of reports and documents involved in the healthcare process; 7) Introduce the plan; 8) Provide a chart to collect data during the patient care process that shows which patients have not followed the therapeutic plan defined in the clinical pathways, and how often they have not done so; 9) Monitor the results and communicate them; 10) Improve patient satisfaction by informing them and their families about the therapeutic plan defined by the clinical pathway; 11) Maintain benefits or identify alternative strategies with regards to the variations observed.^{5,6}

Each CP includes a series of documents, although the time management matrix is essential. This is the way the CP is represented as a Cartesian coordinate system: the x-axis shows time in days or hours, and location of the patient. The actions and interventional procedures (medical assistance, assessments, laboratory test, nurse care, treatment, diet, physiotherapy, etc.) are on the y-axis. Other additional documents which are included in the CPs are: information sheets for patient and/or family member; check sheets; satisfaction surveys; measurement indicators and standardised treatment sheet.^{5,6}

Given that the number of days stay is not relevant for the CPs' time management matrix in MAS, it does not need to be placed on the x axis. It would therefore be advisable to put four sub-processes (Figure 1) enabling all of the processes that are carried out in MUSA to be considered separately. We will analyse this below:

When a work group analyses a general process needed for an interventional procedure, this process is normally divided

	Selection	Admission	Interventional procedure	Recovery and discharge
Medical assistance				
Tests and assessments				
Nurse care				
Treatments, diet, physiotherapy				

Figure 1 – Clinical pathway matrix for MAS.

into four sub-processes: 1) Patient selection sub-process; 2) Patient admission sub-process; 3) Interventional procedure sub-process; and 4) Patient recovery and discharge sub-process.

Protocols and criteria are established for each sub-process which will monitor the way that it is carried out according to a number of indicators.³

Therefore:

- 1) The patient selection sub-process has to consider patient criteria, social-family criteria, inclusion criteria depending on the type of interventional procedure, and inclusion and exclusion criteria depending on the patient's illness. Within this selection sub-process the following intervention criteria are defined: need-based criteria for pre-operative tests, preparation when using anticoagulant treatments, diabetic patients, epileptic patients, hypertensive patients, endocrine alterations, and thromboembolism prophylaxis (recommendations from Spanish Association of Major Ambulatory Surgery).
- 2) The admission sub-process starts with the patient arriving at the unit, and ends by him or her being discharged. During this process, the medical staff will ask the patient if he or she has been taking medication at home prior to surgery. If prescribed, the patient will be given premedication, and analyses will be conducted in accordance with the protocols agreed upon by consensus (Sintrom®, diabetes) or to prepare the patient prior to the operation (thrombocytopenia, etc.).
- 3) The interventional procedure sub-process should consider immediate premedication adapted to the patient's weight and age, prophylaxis of nausea and vomiting in accordance with the Apfel score⁸ and the provision of anaesthesia care, which includes anaesthesiological techniques and use of drugs that facilitate surgical techniques and early discharge.
- 4) Finally, pain and nausea and vomiting must be considered during the recovery and discharge sub-process. If these two problems were to occur it could delay recovery and consequently discharge. As such, in order to prevent them, an adequate analgesic guideline must be established for pain and prophylaxis treatment administered for nausea and vomiting. Once all of the criteria established are met the patient will be discharged. The criteria are taken from modified post-surgery recovery scores by Aldrete⁹ and Chung.¹⁰

Opposition to CPs and the future

CPs have some disadvantages: professionals are not accustomed to working in teams and having to continually improve performance, difficulty in developing the clinical pathway due to lack of previous experience or simply because it is considered a new concept, professionals show apathy and resistance to change, difficulty in determining whether

a given patient should be assigned to a CP, and lack of choice for the CP coordinator or the professional assigned to introduce and adequately develop the CP.¹¹

CP variations can be classified as preventable, unpreventable, and mixed. We can also classify them considering the patient (expected complications, refusing to give informed consent for a test or interventional procedure), the family (delay in discharge due to family problems), healthcare staff (reconsidering the case after receiving new clinical data, incorrectly assigning the patient to the clinical pathway), or the institution (problems with a test, lack of resources).

Analysing the CP variations can cause it to be revised and changed. A poor quality result always means that improvement can be made.

MAS is developed with a high level of protocols and organisation between different specialities and healthcare bodies. If CPs have proven to be undeniably useful in the area of planned surgery, one would assume that for MAS procedures, which combine ideal efficiency conditions with high patient and medical staff satisfaction, they would at least be expected to be encouraging.

Conflict of interest

The authors affirm that they have no conflicts of interest.

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