

# NURSING CASE MANAGEMENT: IDENTIFYING, COORDINATING AND MONITORING THE IMPLEMENTATION OF CARE SERVICES FOR PATIENTS

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**ABSTRACT:** Over the years, various nursing care delivery systems have been experimented. Case management is a work design planned to meet patient needs. Nursing case management organizes patient care by major diagnoses or diagnosis-related groups (DRGs) and focuses on attaining predetermined patient outcomes within specific time frames and resources and requires collaboration of all members of the health care team. Patient involvement and participation is the key to successful case management. A collaborative practice team including clinical experts from appropriate disciplines: nursing, medicine, physical therapy etc, defines the expected outcomes of care for the patient population. Based on expected patient outcomes, each member of the team, using his or her discipline’s contribution, helps determine appropriate interventions within a specified time frame. Successful case management relies on critical pathways and multidisciplinary actions plans (MAPs) to guide care. Variances are patient outcomes or staff actions that do not meet the expectation of the pathway. There is evidence that critical pathways may be associated with reduced complications. Five elements are essential to successful implementation of case management: a) support by key members of the organization (administrators, physicians and nurses); b) a qualified nurse case manager; c) collaborative practice teams; d) a quality management system; e) established critical pathways.

**KEYWORDS:** case management, critical pathways, nursing care services, multidisciplinary actions plans

## 1. INTRODUCTION

One of the challenges for a hospital is how to efficiently organize nursing care so that patients receive the care they need 24 hours a day [McC05].

The purpose of a nursing care delivery system is to provide a structure that enables nurses to deliver nursing care to a specified group of patients. The delivery of care usually includes assessing care needs, formulating a plan of care, implementing it and evaluating the patient’s outcome.

Over the years, various traditional and integrated nursing care delivery systems have been experimented. Debates regarding the pros and cons of each method have focused on identifying the perfect delivery system for providing nursing care to patients with varying degrees of need [SD09].

The major challenges of any nursing care delivery system include effectiveness, cost efficiency, quality and the need of consumers and practitioners.

## 2. CASE MANAGEMENT

Among integrated models of care, nursing case management is a work design planned to meet patient needs. In the 1920s and 1930s, an early form of case management was used in psychiatric care and by public health nurses [Hub00].

While there are many definitions of case management, the 2009 definition approved by Case Management Society of America (CMSA) is as follows: Case management is a collaborative process of assessment, planning, facilitation, care coordination, evaluation, and advocacy for options and services to meet an individual’s and family’s comprehensive health needs through communication and available resources to promote quality cost-effective outcomes [\*\*\*09].

A philosophy is a statement of belief that sets forth principles to guide a program and the individual in his/her practice of that program [PT10]. The CMSA’s philosophy of case management statement articulates that [\*\*\*10]: The underlying premise of case management is based in the fact that, when an individual reaches the optimum level of wellness and functional capability, everyone benefits: the individuals being served, their support systems, the health care delivery systems and the various reimbursement sources. Case management serves as a means for achieving client wellness and autonomy through advocacy, communication, education, identification of service resources and service facilitation. Case management services are best offered in a climate that allows direct communication between the case manager, the client, and appropriate service personnel, in order to optimize the outcome for all concerned [\*\*\*10].

The goals of case management can be client-oriented, administrative, or system oriented [AA90]. Client-oriented goals focus on assuring that clients are receiving appropriate services that support informal care, improve access to formal care, and promote individual and family well-being. Administrative goals concern increasing horizontal and vertical efficiency in order to improve service utilization and constrain costs. System-oriented goals address the

entire service delivery system, in terms of efficient, high-quality, targeted non-institutional services that also contain costs. [SGM01]

Nursing case management organizes patient care by major diagnoses or DRGs and focuses on attaining predetermined patient outcomes within specific time frames and resources and requires collaboration of all members of the health care team. Patient involvement and participation is the key to successful case management [All02].

In an acute care setting, the case manager has a caseload of 10 to 15 patients and follows patients' progress through the system from admission to discharge, accounting for variances from expected progress. One or more nursing case managers on a patient care unit may coordinate, communicate, collaborate, problem solve and facilitate patient care for a group of patients. Ideally, nursing case managers have advanced degrees and considerable experience in nursing [SD09].

After a specific patient population is selected to be case managed, a collaborative practice team is established. The team, including clinical experts from appropriate disciplines: nursing, medicine, physical therapy etc, defines the expected outcomes of care for the patient population. Based on expected patient outcomes, each member of the team, using his or her discipline's contribution, helps determine appropriate interventions within a specified time frame.

To initiate case management, specific patient diagnoses that represent high-volume, high-cost and high-risk cases are selected. High-volume cases are those that occur frequently. High-risk cases include patients or case types who have complications, stay in a critical care unit longer than 2 days or require ventilator support.

Whatever patient population is selected, baseline data must be collected and analyzed first to provide the information necessary to measure the effectiveness of case management. Information about length of stay, cost of care and complication are included.

Case management plays also a key role in efforts to integrate long-term care services into a seamless continuum of care [SGM01].

Successful case management relies on critical pathways and multidisciplinary actions plans (MAPs) to guide care.

In 1996, the National Library of Medicine (NLM) in the USA introduced the term "critical pathway" [V+06].

Critical pathways (also called clinical pathways or care pathways or care maps) are one method of planning, assessing, implementing and evaluating the cost-effectiveness of patient care. They are relatively standardized predictions of patients' progress for a specific diagnosis or procedure. For example, a critical pathway for a specific diagnosis might suggest a certain average length of stay, with certain interventions completed by certain points on the pathway.

Clinical pathways represent a form of "cookbook medicine" that many perceive as an appropriate tool that contributes to quality management, cost-cutting and patient satisfaction [R+08].

Critical pathways are useful because they accommodate the unique characteristics of the patient and the patient's condition. They use resources appropriate to the care needed and, thus, reduce cost and length of stay and may be used in every setting where health care is delivered.

A critical pathway quickly orients the staff to the outcomes that should be achieved for the patient for that day. Nursing diagnoses identify the outcomes needed. If patient outcomes are not achieved, the case manager is notified and the situation is analyzed to determine how to modify the critical pathway.

The care MAP is a combination of a critical pathway and a nursing care plan. In addition, it indicates times when nursing interventions should occur. If a patient deviates from the normal plan, a variance is indicated. A variance is anything that occurs to alter the patient's progress through the normal critical path [MH09].

Variances are patient outcomes or staff actions that do not meet the expectation of the pathway. In general, variance in clinical pathways is a result of the omission of an action or the performance of an action at an inappropriate (often, a late) time period. Because the critical pathway is a series of time-associated actions, this analysis of variance can be overwhelmed by multiple data points. Computer-assisted pathway analysis can help with this issue [E+00].

After a time, the appropriate collaborative practice team analyzes the variances, notes trends, and decides how to manage them. The critical pathway may need to be revised or additional data may be needed before changes are made.

Some features are included on all critical pathways, such as specific medical diagnosis, the expected length of stay, patient identification data, appropriate time frames (in days, hours, minutes or visits) for interventions and patient outcomes. Interventions include medications, nursing activity, physical therapy, etc. The critical pathway must include a means to identify variances easily and to determine whether the outcome has been met [SD09].

The format of the pathway may vary widely. Important features include a task-time matrix in which specific tasks are specified along a timeline. There is a spectrum of pathways that range from a form that takes the place of the medical record to a simple checklist. A reduction in charting that may occur with more complicated pathways is a benefit. However, if the pathway format is too difficult to follow, it will not be used (Figure 1).

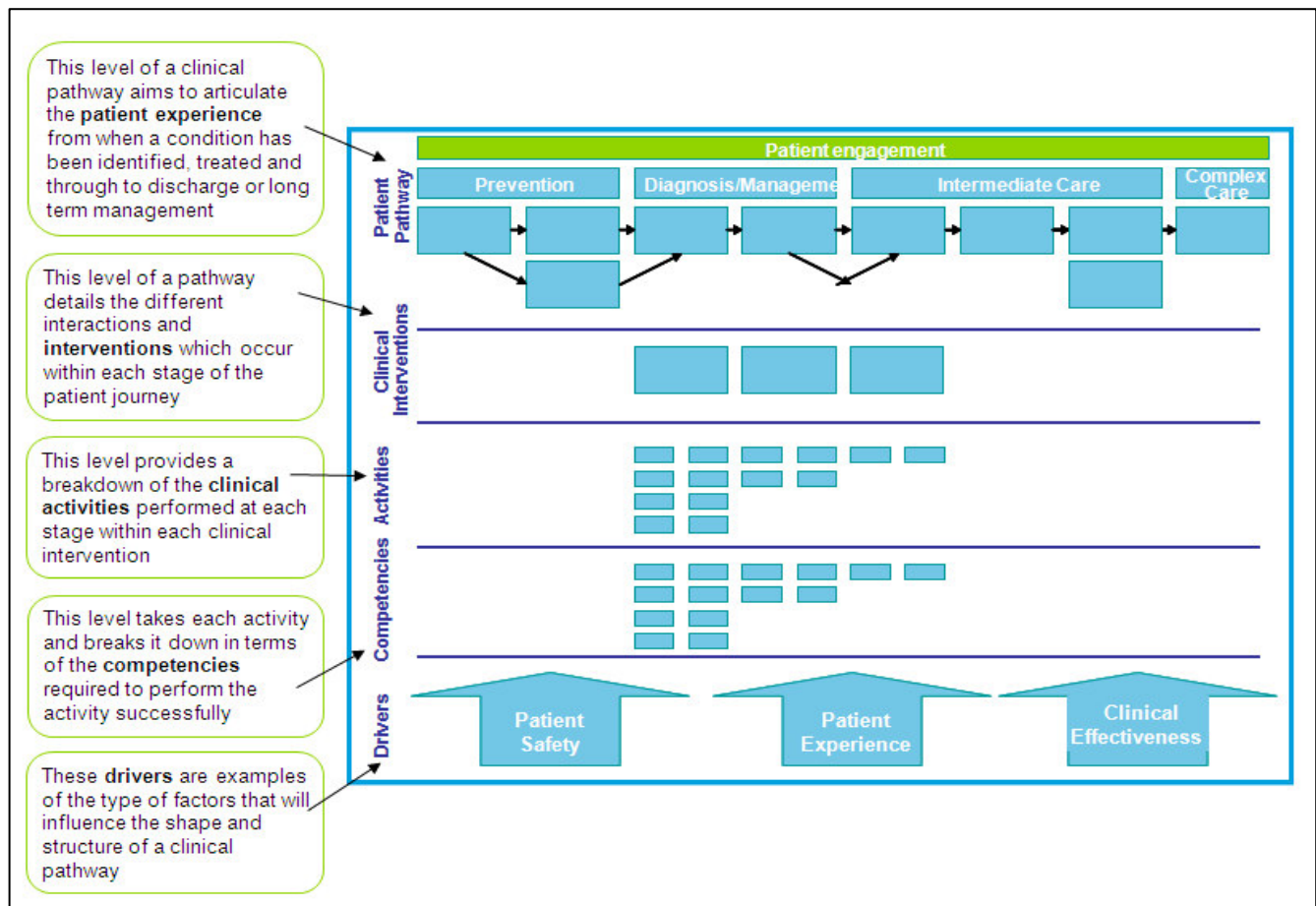


Fig. 1. Clinical Pathway Template

Critical pathways have become widely available in electronic format, where electronic charting and pathway compliance are obtained simultaneously. One disadvantage to this method is the absence of a standard medical record. This may result in duplication of efforts and possible noncompliance with the pathway. This is particularly true among physicians who are likely to be resistant to novel charting methods. For some systems, a simple checklist at the front of the paper chart may be an optimal method for implementing the pathway. These checklists would have areas to be filled in by different staff members active in patient care (Figure 2) [E+00]. Critical pathway implementation can be a challenge, and if not handled well, it can generate major obstacles. Factors critical in implementation include education of all staff members who will be involved in any component of the pathway. This is particularly important for nonparticipants in pathway development. Concerns and misconceptions about the pathway should be addressed. One obvious concern would be repercussions of failure to follow the clinical pathway. Another key issue in implementation is to define the roles within the pathway: Will there be a case manager? Who will collect data? Who will analyze variance within the pathway?

The simple implementation of the pathway is only the first action of the critical pathway. Data must be collected and analyzed, and processes must be improved to achieve the goals of resource savings with improvement in outcomes [E+00].

Historically, critical pathway development has been a nursing initiative. Although this has been a successful model in some institutions, one fault of this process is lack of physician commitment to the pathway.

Active physician participation and leadership is crucial to the development and implementation of the pathway. In addition, it is important to include representatives from all groups that would be affected by the pathway, for example, physical therapy personnel and dietary personnel. The lack of involvement of physicians has been cited as a reason for failure of a pathway [Yan95, Ham93].



Collaborative Critical Path Case Type: Total Hip Replacement				
Patient Name: _____				
Record Number: _____				
	DAY 1 / OR	Y/N	DAY 2 / POSTOPERATIVE DAY 1	Y/N
<i>Patient Activity</i>	Bed rest	—	Begin mobility plan;	—
	T-DB q2h	—	T-DB q2h	—
	Initiate skin protection protocol	—	Cont skin protection protocol	—
<i>Nursing</i>	VS qh x 4, then q4h	—	VS q4h	—
	Assess cir/neuro legs qh x 4, then q4h;	—	Assess cir/neuro q4h	—
	Check drainage/ Hemovac qh x 4, then q4h;	—	Check drainage/ Hemovac q4h	—
	I & O (Foley/ Hemovac) q8h;	—	I & O (Foley/ Hemovac) q8h	—
	Thigh-hi elastic hose	—	Cont elastic hose	—
<i>Medications</i>	Antibiotic	—	Cont antibiotic	—
	Pain control:	—	Cont pain control	—
	PCA pump	—	Cont stool softener	—
	Stool softener	—	Cont home Rx	—
	Cont home Rx;	—	IVs cont	—
	IVs	—	IVs cont	—
		—	Coumadin	—
		—	Sleeping Rx	—
<i>Physical Therapy</i>	Preop instructions	—	Evaluate mobility progress	—
<i>Diagnostic Tests</i>	H & H 2h postop	—	H & H	—
<i>Nutrition</i>	NPO—Cl liq as tol	—	Prothrombin time	—
		—	Diet as tolerated	—
<i>Teaching</i>	Preop: Pain control	—	Repeat teaching	—
	Use of assist devices	—	if nec	—
	Gait control	—		—
	Incentive spirometry	—		—
	Mobility plan	—		—
	Pt/family crit plan given & reviewed	—	Review pt/family crit plan if nec	—
<i>Discharge Plan</i>	SNU evaluation	—		—
	Home Health evaluation	—		—

Fig. 2. Collaborative critical path

A more recent evolution of critical pathways is the incorporation of actual and potential nursing diagnoses with specific time frames. Education pathways are also excellent tools for planning patient and family education. A copy of this form is given to the patient and his family and the nurse reviews the information with them. Thus, both patient and family know what to expect during an anticipated, uncomplicated hospitalization [SD09].

### 3. DISCUSSION

Critical pathway techniques were first developed for use in industry as a tool to identify and manage the rate-limiting steps in production processes [Buf69, Wag75, Gre74, LG91]. In industry, any variation in production process is suboptimal. Thus, by defining the processes and timing of these processes, managers could target areas that were critical, measure variation, and try to make improvements. Once steps were taken to improve the process, there would be a remeasurement. In time, variation would decrease, the time it took to complete the pathway would decrease, costs would decrease, and quality of production would improve.

When applied to health care, the technique of critical pathways has obvious concerns. First, unlike in manufacturing, not all variation in patient care is negative. Individual patient factors may contribute to variation that cannot and should not be controlled by the system. For example, if postoperative extubation

occurred within a prespecified time period based on a pathway, there would be early extubations with potential for harm. Also unlike in manufacturing, in which the products are standardized, patients are different and may not fit within a pathway. Second, there exists concern that streamlining care may have a negative impact on patient outcomes. For example, if a care pathway suggests a 2-day stay in the cardiac care unit, a provider may alter care against his or her best judgment to stay within the plan. Finally, physicians have objected to “cookbook medicine” and have felt an erosion of professional autonomy with the critical pathways. Without physician support of the pathway, it is unlikely to achieve any of the stated cost-saving or quality goals [E+00].

Despite these obvious limitations, the use of critical pathways is being embraced in many case management systems. Although designed as a tool for both cost savings and improved quality of care, it is the former that has been emphasized by managers.

Interest in critical pathways has increased because anecdotal reports of cost savings have been disseminated. These reports in general have not followed careful study designs [Tru93, Lor93, Lon93].

A review made in 2010 for The Cochrane Collaboration has established that critical pathways may be associated with reduced complications and improved documentation when implemented in hospitals without negatively impacting on length of stay or costs. Reduced complications were associated with invasive interventions or surgical conditions. In general, the reporting of critical pathways development and implementation processes was poor. The magnitude of cost savings should always be assessed in context with clinical relevant patient outcomes (i.e. mortality) [R+10].

### 4. CONCLUSIONS

In conclusion, five elements are essential to successful implementation of case management: a) support by key members of the organization (administrators, physicians and nurses); b) a qualified nurse case manager; c) collaborative practice teams; d) a quality management system; e) established critical pathways [SD09]. It should be noted that the development and implementation of clinical pathways consumes a considerable amount of resources [R+08].

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