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# Care models for people with chronic diseases: integrative review

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## Care models for people with chronic diseases: integrative review

**Objective.** To identify the care models and the impact of the use of these in the care of people with chronic diseases reported in the literature in the years 2000 to 2014. **Methods.** Integrative literature review in which the following guiding question was adopted: Which care models are used in the care of patients with chronic diseases and what impacts can be verified through their application? We consulted the bibliographic databases Virtual Health Library, LILACS, MEDLINE, Spanish Bibliographic Index of Health Sciences and the Database of Nursing. **Results.** The sample consisted of 17 articles on the topic of interest. Three categories emerged from the analysis: health

care costs, model-based care experience, and patient autonomy. The articles addressed self-management, case management and care model for people with chronic diseases. The major impacts on the use of the models were: a better relationship between the patient and the health professional, an increase in the autonomy of the person with chronic illness, and a reduction in personal and health care expenditure. **Conclusion.** The use of care models for people with chronic diseases presents benefits to the patient and to the health system. Nurses must actively participate in the application of these care models of people with this type of illness.

**Descriptors:** chronic disease; models, nursing; nursing care; nursing, practical.

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## Modelos de cuidado de personas con enfermedades crónicas: una revisión integrativa

**Objetivo.** Identificar los modelos de cuidado y el impacto de la utilización de éstos en el cuidado de personas con enfermedades crónicas reportados en la literatura en los años 2000 a 2014. **Métodos.** Revisión integrativa de la literatura en la que se tuvo la pregunta norteadora: ¿cuáles modelos de cuidado son utilizados en la atención de los pacientes con enfermedades crónicas y qué impactos pueden ser verificados mediante su aplicación? Se consultaron las bases bibliográficas Biblioteca Virtual em Saúde, LILACS, MEDLINE, Índice Bibliográfico Espanhol de Ciências da Saúde y la Base de dados em Enfermagem. **Resultados.** La muestra estuvo constituida por 17 artículos sobre el tema de interés. Del análisis emergieron tres categorías: los costos del cuidado de la salud, la experiencia de atención basada en un modelo y la autonomía del paciente. Los artículos abordaron la autogestión, la gestión de casos y el modelo de cuidado a personas con enfermedades crónicas. Los mayores impactos en la utilización de los modelos fueron: una mejor relación del paciente con el profesional de salud, aumento de la autonomía de la persona con enfermedad crónica y la reducción del gasto en salud personal y del sistema sanitario. **Conclusión.** La utilización de modelos de cuidado de personas con enfermedades crónicas presenta beneficios al paciente y al sistema de salud, modelos en los cuales los enfermeros deben participar activamente en su aplicación.

**Descriptor:** enfermedad crónica; modelos de enfermería; atención de enfermería; enfermería práctica.

## Introduction

Management of Chronic Diseases (CD) lacks attention and analysis worldwide. Many professionals develop models to minimize the impact of these diseases on people's health, as they are multifactorial conditions that impose requirements on patients, their families and the health system. The care of most of the CD include comparable and effective management strategies, so that similarities start to overlap differences.<sup>1</sup> Patients with CD need support in their community to maintain good health. They lack skills for self-management, and thus, health teams must provide planned and integrated care

## Modelos de cuidados á pessoas com doenças crônicas: revisão integrativa

**Objetivo.** Identificar os modelos de cuidado e o impacto da utilização destes no atendimento à pacientes com doenças crônicas, publicados na literatura de 2000 a 2014. **Métodos.** Revisão integrativa em que a questão norteadora foi: Quais modelos de cuidado são utilizados no atendimento aos pacientes com doenças crônicas e que impactos podem ser verificados mediante sua aplicação? As bases de dados pesquisadas foram o diretório da Biblioteca Virtual em Saúde, nas bases Literatura Latino-Americana e do Caribe em Ciências da Saúde, Medical Literature Analysis and Retrieval System Online, Índice Bibliográfico Espanhol de Ciências da Saúde e a Base de dados em Enfermagem. **Resultados.** A amostra foi composta de 17 artigos sobre o tema de interesse. Na análise emergiram três categorias: custos em saúde, experiência do cuidado com base em um modelo e autonomia do paciente. Os artigos abordaram a autogestão, a gestão de casos e o modelo de cuidados para pessoas com doenças crônicas. Os impactos da utilização dos modelos foram: melhor relação do paciente com o profissional de saúde, aumento da autonomia da pessoa com doença crônica e redução dos gastos em saúde. **Conclusão.** O uso de modelos de cuidados para as pessoas com doenças crônicas apresenta benefícios para o paciente e para o sistema de saúde. Os Enfermeiros devem participar ativamente na implementação desses modelos de cuidados para as pessoas com estas doenças.

**Descritores:** doença crônica; modelos de enfermagem; cuidados de enfermagem; enfermagem prática.

and treatment to meet their needs and assist them in early detection of signs and symptoms to avoid evolving the disease to an acute exacerbate state.<sup>1</sup> For this to be possible, professionals must acquire specific skills, and health services should work in interconnected, structured and organized through attention models or care models. These consist of careful logical systems that communicate, articulate and bind in a unique way the relationship between the population and its subpopulations divided by risk, interventions and health outbreaks interference.<sup>2,3</sup>

The Chronic Care Model (CCM) and the *Innovative Care for Chronic Conditions* (ICCC) stand out

among models for CD. The first was introduced by a North American Institute in mid-1990 in order to transform care through a combination of elements such as health staff, self-management and decision support, and use of information and recording technologies.<sup>4</sup> The ICCC derived from the above was developed by the World Health Organization and is based on the belief that outcomes for chronic conditions are achieved when patients and family members are motivated and informed and health professionals work together.<sup>5</sup> These and other models have been created due to the need for changing the management of CD. They have the purpose of determining what actions and practices are adequate, respecting the peculiarities of their care. Thus, it is understood that there are some care concepts that have become part of the health discourse with the increased prevalence of CD worldwide, such as self-care management and case management (case management and operation are used interchangeably). Given the impact of CD and the need for life-long treatment and monitoring, these diseases require a new approach, such as the models of care. Thus, the present study aims to identify care models and their impact in the care of patients with CD published in literature from 2000 to 2014.

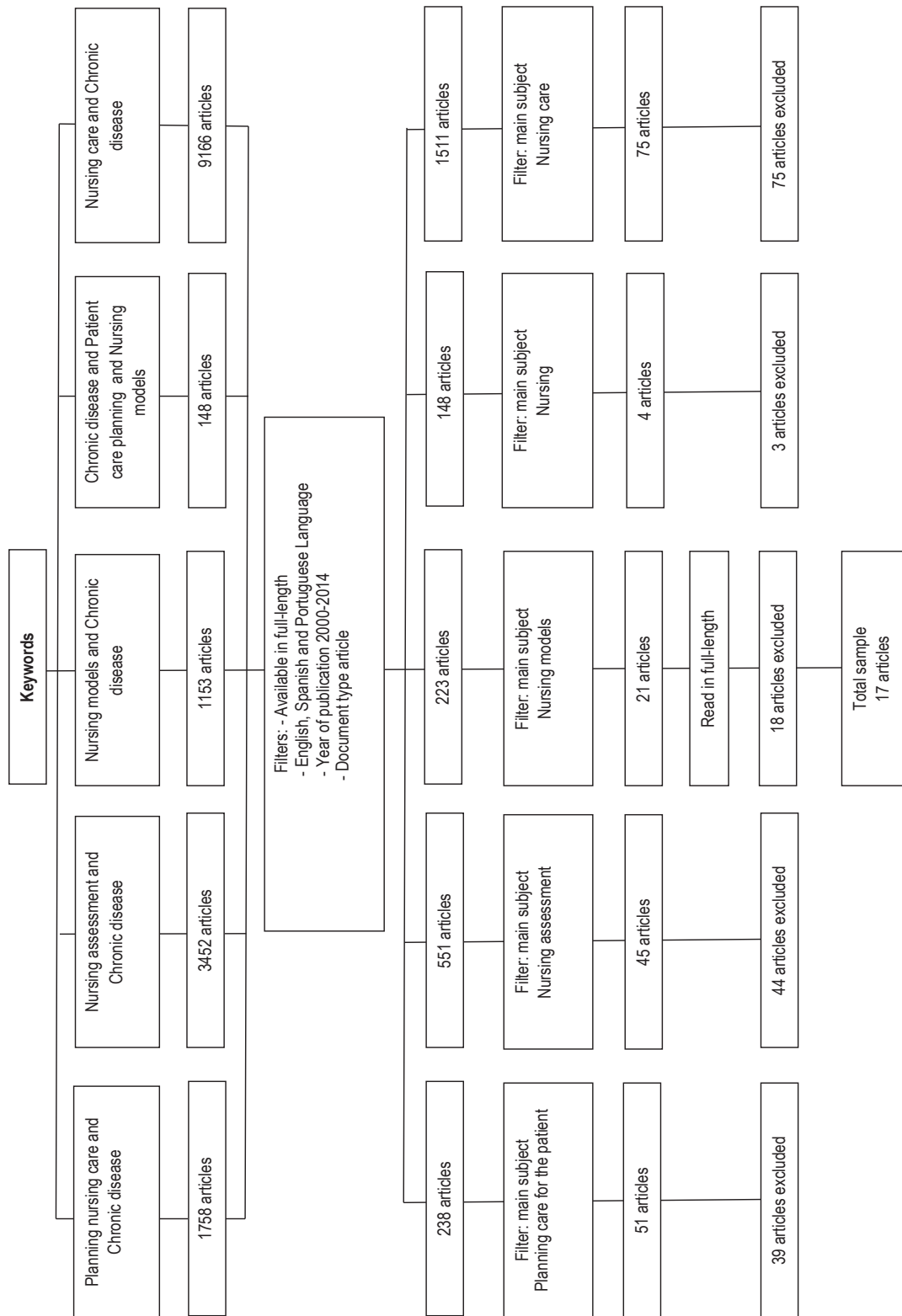
## Methods

This is an integrative review, which allows summarizing studies approaching the selected theme, contributing to the understanding of problems and providing information for evidence-based practice. To guide this integrative literature review, a formal and rigid work structure based on a previously developed and validated research protocol was included.<sup>6</sup> The following steps were defined: identification of the theme and definition of the guiding question; establishment of inclusion and exclusion criteria of articles; approximation of material based in common characteristics; analysis and discussion of results, identification

of differences and conflicts, and presentation of results. The main question of this study was: What care models are used to assist patients with chronic diseases and what are the impacts of their application? The databases searched were the directory of the Virtual Health Library (VHL), the Latin American and Caribbean Health Sciences (LILACS), *Medical Literature Analysis and Retrieval System Online* (MEDLINE), Spanish Bibliographical Index on Health Sciences (IBECS), and Nursing Database (BDENF).

The search took place from May through June 2014, using the following controlled and non-controlled and associated descriptors: “models of care *AND* chronic disease”, “nursing care *AND* chronic disease”, “nursing assessment *AND* chronic disease”, “patient care planning *AND* chronic disease” and “chronic disease *AND* patient care planning *AND* nursing models”. This resulted in gathering a total of 15677 articles. Inclusion criteria were: articles available in full-length for free, in Portuguese, English and Spanish, published from 2000 to 2014. This resulted in 2,671 articles, for which the main subject filters were applied, reducing the number to 196 articles. These were submitted to exhaustive reading in full-length, independently, to ensure rigor while selecting those articles contemplating the guiding question. Exclusion criteria were: articles with population or sample composed of children or patients with chronic wounds and articles repeated in different databases. After applying these criteria, 17 articles remained (Figure 1).

The aspects identified in the articles selected were: title, authors, publication year, journal, keywords, objective(s), methodology, results and the type of care model. Data were pooled from qualitative analysis, which identified the similarities; Thus, there were three categories: “Health costs”; “Model-based care experience” and “Patient autonomy”.



**Figure 1.** Algorithm of the methodological trajectory

## Results

The sample included 17 articles, all published in international journals in English and in the MEDLINE database. Among journals, seven are Nursing journals, seven are Medical journals, one involves both areas, and two are interdisciplinary. Most articles (12) had “Planning Assistance *AND* Chronic Disease” as descriptors. No article was included with the keywords “Nursing care *AND* chronic disease”. As for the year of publication, seven were published in 2008 and four in 2012. The CD addressed in the articles represent numerous areas such as genetic, psychiatric,

musculoskeletal, metabolic, cardiovascular disorders, among others. Regarding care models exposed in the studies, nine were of the case management model type, six were of the self-management model type, and two were CCM. The evaluation of results led to clustering converging issues, from which three categories derived. These are entitled “Costs for the Health System”; “Model-based care experience” and “autonomy of the patient”. In the first and third category, articles covering the case management model predominated, and in the second model, self-management predominated (Table 1).

**Table 1.** Characterization of articles according to title, year, journal, objective and care model

Title	Authors (year)	Journal	Objective	Model
Experiences of care planning in England: interviews with patients with long term conditions <sup>7</sup>	Newbould <i>et al.</i> (2012)	BMC Fam. Pract.	Exploring the care planning experience in patients with long-term conditions in three areas in England.	Case management
A Pilot test of the effect of guided care on the quality of primary care experiences for multimorbid older adults <sup>8</sup>	Boyd <i>et al.</i> (2008)	J. Gen. Intern. Med.	To evaluate the effect of a pilot intervention to improve the quality of primary care experiences for seniors with chronic illnesses.	Case management
Improving medical and psychiatric outcomes among individuals with bipolar disorder: A randomized controlled trial <sup>9</sup>	Kilbourne <i>et al.</i> (2008)	Psych. Serv.	To examine a health care model to bipolar disorder and to determine if individuals assigned to receive care through the model have better medical and psychiatric outcomes compared to usual care.	Self-management
A goal attainment pain management program for older adults with arthritis <sup>10</sup>	Davis & White (2008)	Pain Manag. Nurs.	To test a pain management intervention, which includes the definition of goals for people over 65 years of age who live independently in residential environments.	Self-management
Introducing the New England 4G framework of guided self-health for people in rural areas with physical and psychological conditions <sup>11</sup>	Stuhlmiller & Tolchard (2012)	Aust. J. Rural Health	Discusses the 4G self-management model of New England.	Self-management
Prevalence and benefits of care plans and care planning for people with long-term conditions in England <sup>12</sup>	Burt J <i>et al.</i> (2012)	J. Health Serv. Res. Policy	To determine the prevalence and benefits of planned care and care plan for patients with chronic diseases.	Self-management
Pre-hospital discharge planning: empowering elderly patients through choice <sup>13</sup>	Merriman (2008)	Crit. Care Nurs. Q.	To describe the elements of a discharge planning program at Penn State Hershey Medical Center.	Case management
Carelink: Partners in a caring model: a cardiac management program for home care <sup>14</sup>	Shellman <i>et al.</i> (2008)	Home Health Nurse	To highlight the main results related to the <i>Carelink</i> model.	Self-management

**Table 1.** Characterization of articles according to title, year, journal, objective and care model (cont.)

Title	Authors (year)	Journal	Objective	Model
Nurse practitioner-led multi-disciplinary teams to improve chronic illness care: The unique strengths of nurse practitioners applied to shared medical appointments/group visits <sup>15</sup>	Watts <i>et al.</i> (2009)	J. Am. Acad. Nurse Pract.	To describe the roles of nursing professionals in a health care model for patients with chronic disease.	Chronic Care Model
Comprehensive Primary Care for Older Patients with Multiple Chronic Conditions <sup>16</sup>	Boult & Wieland (2010)	JAMA	To describe the results of studies carried out in the US on the effects of care models for elderly patients with multiple chronic conditions.	Case management
The promoting effective advance care for elders (PEACE) randomized pilot study: theoretical framework and study design <sup>17</sup>	Allen <i>et al.</i> (2012)	Popul. Health Manage.	To describe the theoretical basis for Promoting effective Advanced Care for the Elderly.	Self-management
Patient-Centered Plan-of-Care Tool for Improving Clinical Outcomes <sup>18</sup>	Rocco <i>et al.</i> (2011)	Q. Manage. Health Care	To compare clinical outcomes of patients who take part in a patient-centered care program and a control group, to verify the effectiveness of the care planning tool.	Case management
Guided Care: a new frontier for adults with chronic conditions <sup>19</sup>	Sherry <i>et al.</i> (2008)	Prof. Case Manage.	To describe the Guided Care as a promising model of case management.	Case management
Care Coordination for Patients With Complex Health Profiles in Inpatient and Outpatient Settings <sup>20</sup>	Berry <i>et al.</i> (2013)	Mayo Clin. Proc.	To describe the applicability and importance of Gundersen Model.	Case management
Improving diabetes patient outcomes: Framing research into the chronic care model <sup>21</sup>	Dancer & Courtney (2010)	J. Am. Acad. Nurse Pract.	To review the results of recent research that demonstrated improved outcomes for patients with type 2 diabetes and fit them in the Chronic Care Model.	Chronic Care Model
The community case management program: For 12 years, caring at its best <sup>22</sup>	Luzinski <i>et al.</i> (2008)	Geriatr. Nurs.	To describe a community case management program	Case management
Coordinated multidisciplinary care for Huntington's disease. An outpatient department <sup>23</sup>	Veenhuizen & Tibben (2009)	Brain Res. Bull.	To describe a plan of care coordinated by a case manager at the home of patients with Huntington's disease.	Case management

## Discussion

One of the models used for care is the case management. This is a strategy that health services and social services use to support patients in their care, and that can result in the organization of a care plan in the form of a document with definition of agreed goals.<sup>7</sup> This model is also understood as a process of cooperation between a health professional, the patient with complex conditions and the social support network, to plan, monitor

and evaluate care alternatives, in order to provide a qualified care, that may increase the functional ability and preserve the individual and family autonomy.<sup>5</sup>

The English Department of Health seeks a care planning based on case management. In this model, the person with a chronic condition comes into contact with the nurse or other health professional, discusses his care plan, implement it in written or electronic form (via email) and



schedules a new meeting to review goals. This planning allows shared decisions, supports the patient to manage his condition and promotes care based on scientific literature.<sup>7</sup> In North American countries, there are case management programs adopted by health insurance companies, such as *Guided Care*, *Geriatric Resources for Assessment and Care of Elders* (GRACE), *Program of All-Inclusive Care for the Elderly* (PACE), among others. All these are models used in primary care and make the development of a comprehensive care plan possible, incorporating protocols based on evidence, the implementation of a long term care plan, proactive monitoring of the patient's clinical status, adherence to the care plan, and coordination of primary care in hospitals and emergency services.<sup>16</sup>

Another case management used in the United States by the health insurance companies is the Gundersen. This calls for improved communication between health professionals and patients in order to make them partners in the decisions taken on their care and in the pursue of better health conditions.<sup>10</sup> It was observed in a Brazilian study that the planning of care used as a tool served as a guide to record goals and to facilitate the case management. It was found that when guidelines are agreed between patients and professionals, and recorded, this helps to give continuity to the care in the homes.<sup>24</sup> Self-management is considered another model of care that is associated with teaching skills for problem solving. Its purposes are to incite changes in behavior, to teach the patient to recognize signs and symptoms of exacerbation of the disease and act before these.<sup>25</sup> An example of this model is the 4G, in which the health professional distributes information and guide self-management, in identifying the problem and of habits and lifestyle changes necessary. This takes place in three stages: meeting, generation and conduction. At first, the patient analyzes his situation through the five W, *What? When? Where? Who? Why?* and questions the impact of this in his life. Then, the professional helps the patient to understand the problem and to set medium-term goals, acting as a guide in the evaluation and review of such goals.<sup>11</sup>

Another self-management program is the Carelink. This was designed to assist the elderly in self-management of chronic conditions, with home visits, nursing interventions, health education and continuous monitoring. Nursing students, in partnership with communities, conduct training activities to promote and maintain health.<sup>22</sup> In addition to case management and self-management, the CCM, developed by Wagner *et al.*<sup>26</sup> assists in chronic situations of high prevalence and in the failure of systems to take care of them. The objective is to turn the daily care for patients with CD into something preventive and proactive by combining planned actions with community support, integrated decision and records, to promote teamwork and patient autonomy.<sup>4,15</sup>

To identify the impact of these models, the first category "Costs to the health system" refers to the use of the health care models by professionals in order to reduce financial costs of CD. Studies carried out with health insurance companies in North-America that adopt some case management and self-management programs showed that such companies reduced by 23% their cost by avoiding conducting unnecessary hospital care, which are performed in homes. When programs are not used, this results in 75% more costs for the health system.<sup>16,19,20</sup> The second category "Care experience based on a model" refers to the accounts on the experience of being assisted based on case management and self-management. One study found that when patients are assisted based on case management, they felt surprised and were not familiar with the term "care planning".<sup>7</sup> Other studies reported that case management can improve the quality of communication between the health team and patients and help to satisfy those involved in the experience of care, whether doctors, patients or families.<sup>8,16,19</sup> The use of the GRACE and PACE models and Gundersen program, patients reported receiving more information about their conditions, they had fewer needs that were not cared for, and the last aspect led to change the outbreak of the disease for the patient.<sup>16,20</sup>

A trial with bipolar affective disorder patients tested the case management and noted that



patients whose care was performed with this model showed improved physical and mental health quality when compared to the usual care group. In the case of applying the Carelink model, it was found that the patient started to manage his illness safely and effectively and had no readmissions in the period.<sup>9,22</sup> The last category “Autonomy of the patient” concerns the role of the patient in making choices before the guidelines provided by the health team. Therefore, the will of one will prevail over the other, as exemplified in the case study that employed a home care plan for two patients who had Huntington’s disease. One of them reported satisfaction with the care and returned to his work and leisure activities while the other refused to follow the guidance provided and his choice was respected.<sup>23</sup>

**Conclusions.** The use of case management model predominated and as benefits were found the close relation between patients and professionals, patients’ autonomy, reduced expenses to individuals and health systems. We emphasize the importance of using these models in Brazil, since there was no national study included in this work. Thus, we suggest that health professionals share their experiences in the application and/or creation of other care models adapted to the Brazilian reality with a view to incentive the active participation of nurses in the use of these new technologies that can be applied in the care of chronically ill patients.

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