



Continuing Education



Disease management: Elements of disease management

Learning Objectives

Describe the role of population demographics in disease management

Describe the role of clinical practice guidelines in disease management

Describe the role of intervention techniques in disease management

Describe the role of patient-data monitoring in disease management

Describe the role of outcomes assessments in disease management

This first article in a three-part series defines the concept of disease management and discusses its major elements: population demographics, clinical practice guidelines, intervention techniques, monitoring patient data and outcomes assessment.

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Disease management (DM) can be defined as a systematic, population-based approach with three main components:

- Identification of patient groups at risk
- Application of therapeutic interventions derived from evidence-based clinical practice guidelines
- Measurement of the clinical, economic and humanistic outcomes achieved by the interventions

The building blocks of these three components represent the underlying elements of disease management. They include: population demographics, clinical practice guidelines, intervention techniques, patient data and outcomes assessment.

Population demographics

Identifying the demographics of the patient or member population is a critical element of

disease management. Demographic information includes age, sex, race, socioeconomic factors, lifestyle factors (e.g., smoking) and health profiles. This information is obtained from a variety of sources and then used to categorize patients into clinically significant subgroups, such as “hypertension” or “diabetes.” Based on the prevalence of these clinical subgroups, the plan can identify which patients (i.e., diseases) may benefit most from a disease management approach.

Some organizations predict future costs by grouping the disease categories seen in their patients into larger categories that reflect the intensity of medical services that will be required. These data can serve as the basis for negotiating insurance premiums or capitation payment.

Basic information about age and sex can also give valuable predictive information about overall health costs. An organization with a large

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number of enrollees close to retirement age or a large number of women of childbearing age can use the data to predict costs in the next several years.

Epidemiology is the study of the distribution and determinants of disease in human populations. Epidemiologic techniques can be used to characterize the burden of a specific disease within a population and identify subgroups at high risk of experiencing a health problem. Measures of disease burden can be described for an entire population or for subgroups defined by demographic data such as age, sex and race/ethnicity. Five broad categories are measured as part of defining the burden of disease, and all five are important considerations in disease management:

- Morbidity (i.e., proportion of the population with disease or prevalence)
- Mortality (death rate)
- Disability (e.g., days missed from work/school)
- Health resource utilization (e.g., emergency room visits, hospitalizations)
- Quality of life (e.g., social functioning)

Clinical practice guidelines

Clinical practice guidelines are systematically developed statements that influence practitioner and patient decisions regarding appropriate healthcare for specific clinical circumstances. The basic principle underlying clinical practice guidelines is that they reflect optimal medical practice for the disease as a whole. Medical choices are thus based on clinical consequences rather than isolated costs, and the end result is that optimal medical practice also turns out to be the most economic and humanistic practice.

Well-developed clinical practice guidelines address the entire spectrum of a disease, including identification of risk factors and preventive measures as well as diagnostic procedures and recommended therapy. Physicians may customize treatment according to each patient's needs within the guideline boundaries.

The two primary types of clinical practice guidelines are:

- Boundary guidelines: an acceptable range of decisions used in treating a patient's condition that provides several decision pathways from which the physician can choose the most optimal approach for each patient
 - Critical pathways: strictly defined protocols, usually developed for a particular healthcare institution and oriented toward specific procedures
- Clinical practice guidelines offer MCOs a means to:

- Disseminate medical information and enhance care by summarizing and providing a consensus of available data and making recommendations about criteria for diagnosis and treatment

- Systematically organize currently available medical knowledge and identify areas that require further research
- Increase accountability of providers for improving the efficiency of their services
- Document their practice decisions and outcomes and demonstrate that they have mechanisms for improvement.

Clinical practice guidelines should incorporate input from all key healthcare professionals involved in the treatment of a particular disease. The development of clinical practice guidelines includes a literature review of relevant clinical studies and expert opinions (consensus-based guidelines) and interactive feedback from clinical outcomes data (evidence-based guidelines)

Well-developed clinical practice guidelines address the entire spectrum of a disease, including identification of risk factors and preventive measures

To be successful, clinical practice guidelines must be clearly written, comprehensive and specific; represent a synthesis of the best and most current medical knowledge; and be easily accessible to physicians. Many MCOs adapt existing clinical practice guidelines to meet the needs of their specific organization and patient population. Such guidelines are indispensable in disease management programs.

Intervention techniques

Intervention techniques increase the likelihood that patients will adhere to their therapeutic regimen and providers will participate fully in the disease management program, including following the relevant treatment protocols and clinical practice guidelines.

Patient interventions emphasize:

Education: Patient education may be disseminated through educational brochures, videos, newsletters, Web sites or educational seminars provided by nurses, dietitians or trained educators. Pharmacists can provide disease information, drug information, and information regarding appropriate use of medications, adverse effect profiles and drug interactions.

Prevention: Currently, payers and providers of healthcare services are encouraging patients to take responsibility for their own physical and mental well-being. Educational programs and services frequently focus on disease prevention

and lifestyle modifications, including nutrition, exercise and fitness, and behavior modification. Behavior modification or behavioral healthcare deals with mental health, substance abuse and chemical dependency.

Provider interventions focus on increasing awareness and utilization of clinical practice guidelines for specific diseases. These interventions may include:

- Educational seminars regarding current medical research
- Immediate access to treatment protocols and summaries of clinical practice guidelines via computer or handouts
- Counterdetailing and drug therapy information provided by pharmacists
- Review of prescription patterns to identify physicians following recommended guidelines compared to those who are not

Case managers are important players in this concept of intervention. They assess, plan, implement, coordinate, monitor and evaluate options and services to meet an individual's health needs across all provider settings. They move patients

efficiently through the healthcare system while reducing overall costs and improving the quality of care. Appropriate patient education and compliance monitoring provided by case managers can reduce the number of acute episodes that are responsible for the large expenditures and high morbidity associated with chronic conditions.

Demand management, another aspect of intervention, refers to health plan programs and services that promote good health while managing utilization of services. Demand management includes patient services such as:

- Nurse advice lines, which provide members with information on medical conditions, health promotion, preventive care, etc.
- Preventive services, such as immunizations, mammograms, routine physical examinations, health assessments and counseling
- Health risk appraisals, which are used to obtain information from members regarding behaviors and actions that can influence health status, such as smoking and alcohol use or lack of seat belt use

Monitoring patient data

Accurate and complete patient data must be gathered and maintained to monitor the effects of clinical practice guidelines and perform outcomes assessments. To demonstrate the benefits of a DM program, organizations need to collect and analyze the data for individual patients, and they also need to track this information throughout all care settings – both ambulatory and acute.

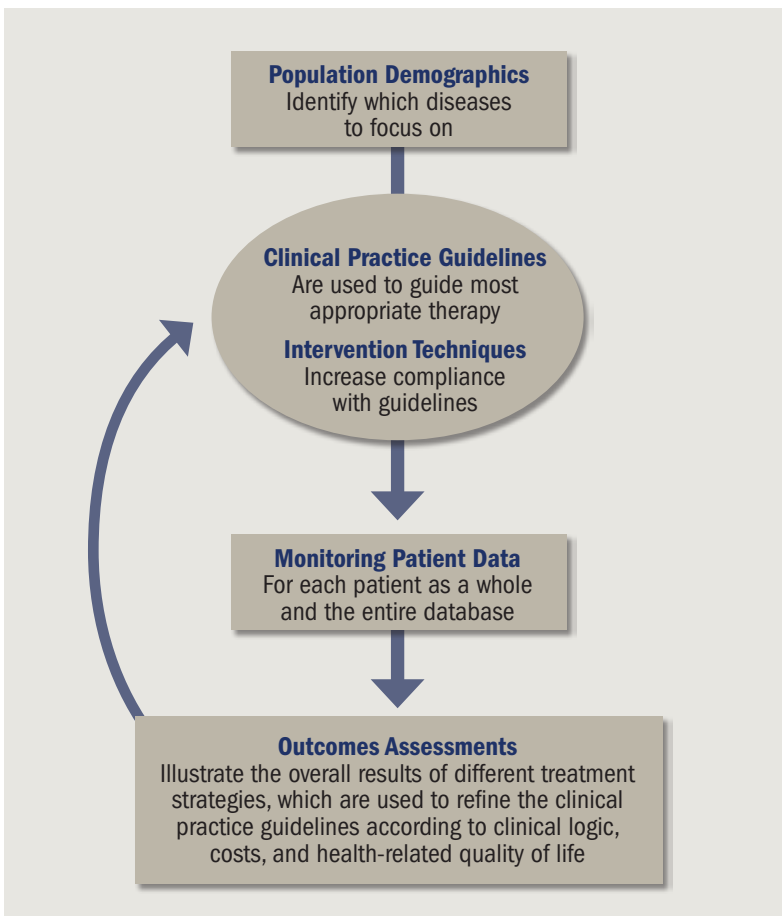
Effective patient-data monitoring requires the use of integrated electronic information systems capable of analyzing different types of clinical and financial data obtained from a variety of providers (e.g., pharmacists, physicians, insurers, etc.).

New information technologies are also emerging to meet this need. The Continuity of Care Record, for example, is a standard specification for electronic health records developed jointly by several organizations. The CCR organizes and makes transportable a set of basic patient data, consisting of data related to administration (e.g., insurance), demographics (e.g., identifiers) and clinical experience (e.g., summary of health status, treatment plan), covering one or more healthcare encounters. The goal of the CCR is to enable each successive provider to easily access and accurately update all relevant patient information to support the safety, quality and continuity of patient care. The CCR is completed by physicians, nurses, and all ancillary providers and is readable by both humans and computers.

Other new information technologies in use include the following:

- Telemedicine refers to medical activities “performed over distances when distance is an issue.”

KEY ELEMENTS OF DISEASE MANAGEMENT



Examples of such medical activities include the diagnosis, treatment and prevention of disease; continuing education of healthcare providers and consumers; and research and evaluation. Other uses of telemedicine include the dissemination of guidelines for patient care through the Internet and the establishment of Web pages by pharmaceutical companies to provide information and guidelines about new products and their use.

- Wireless technology is another potential option for data collection. These technologies could be used to gather clinical information (e.g., blood pressure measurements, blood glucose levels) on a daily basis. Handheld personal digital assistants (PDAs) are being used by an increasing number of physicians and patients for multiple purposes. Physicians can identify potential problems of medications for particular patients, send prescriptions to pharmacies and download patient histories.

Performing outcomes assessment

Outcomes research involves measuring and investigating methods of improving patient health, including interventions such as pharmaceutical products, procedures, behavior-modification strategies and disease management programs. Outcomes research measures both cost-effectiveness and effectiveness in improving care.

When performing outcomes assessment, data regarding the economic, clinical and humanistic outcomes of various treatment alternatives is systematically collected, assessed and balanced against one another to determine their value. For example, pharmacoeconomic research that analyzes the cost utility, cost-effectiveness and cost benefit of a particular drug therapy provides a means for analyzing the economic and clinical value of a treatment alternative.

A current challenge to healthcare providers, payers, administrators and users is to find or create a system for combining and weighing these variables when evaluating the value of a particular treatment choice or plan.

In 2006, the Disease Management Association of America made recommendations related to the use of uniform terminology and codes, research studies, financial metrics and measurement techniques for less tangible factors, such as patient satisfaction and perception of mental and physical health. These outcomes research recommendations included using:

- A pre/post design that uses, if possible, an equivalent and concurrent comparator group.
- Measurement methods for identifying patients, qualifying study participants, and measuring trend results that ensure equivalence between the treatment and baseline groups.

Article Summary

- Disease management can be defined as a systematic, population-based approach with three main components: identification of patient groups at risk, application of therapeutic interventions and measurement of outcomes achieved by the intervention.
- Identifying the demographics of the patient or member population is a critical element of disease management.
- Clinical practice guidelines are systematically developed statements that assist practitioner and patient decisions regarding appropriate healthcare for specific clinical circumstances.
- Intervention techniques increase the likelihood that patients will adhere to therapeutic regimens and clinicians will follow treatment guidelines.
- Accurate and complete patient data must be gathered and maintained to monitor the effects of the clinical practice guidelines and perform outcomes assessments.
- Outcomes research measures and investigates methods of improving patient health, including interventions such as pharmaceutical products, procedures, behavior-modification strategies and disease management programs.

- A measurement period of one year with subsequent remeasurement

The tool to measure patient satisfaction with DM programs contains four areas: access to care, coordination of care, improvements to quality of life and ability to self-manage chronic conditions.

The process of developing and implementing clinical practice guidelines is firmly linked with the information provided by outcomes assessment of the patients who have been treated using the guidelines. The information generated by the outcomes assessment is used to refine the clinical practice guidelines, which in turn provide subsequent data for future outcomes assessment in a continuous cycle. In addition, outcomes research can evaluate the economic impact of treatment guidelines so that providers can allocate resources based on both clinical and cost data.

Outcomes assessments also can be used to provide accountability data. Increasingly, healthcare buyers are using outcomes assessments to replace earlier utilization management efforts performed on a case-by-case (traditional management) basis.

The next article in the series will discuss issues related to managed care and disease management programs.