

# APPLICATION OF MANAGEMENT PROGRAMS FOR CHRONIC DISEASES - INTERNATIONAL EXPERIENCE AND SITUATION IN BULGARIA

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**Abstract.** Disease management programs (DMPs) are successful in different regions of the world and there are possibilities for their application in Bulgaria. A retrospective approach is used in the analysis of 11 articles, for the period 2002 – 2011. The data shows that the disease management programs improve the coordination between the different participants in the system and ensure comprehensiveness and continuity of the health care and, at the same time, early diagnostics, therapy and rehabilitation.

**Keywords:** health care, chronic diseases, programs, management

**Introduction:** The American experience in the identification of chronic diseases and the provision of healthcare in accordance with the patients' needs has influenced Europe and other countries worldwide. This experience lies at the basis of the establishment of models of integrated care in the Netherlands, Austria, Japan, Switzerland and other countries, which aim at improving accessibility and the quality of the care for patients with chronic diseases and the related costs. Meanwhile, a number of other European countries have started experimenting with different models and programs for integrated care for patients with chronic diseases. In Germany, disease management programs have been introduced on a national level, so as to include a great number of patients with chronic diseases.

**The aim of the research** is to present the programs for management of chronic diseases in the countries from Europe and the world.

**Material and methods:** Historical method – literature review and investigated international experience of chronic disease management programs.

**Discussion:** The practice in Canada, the USA and Great Britain shows that the care coordination programs – including case management/care management and disease management – have emerged to improve quality. Case management is a comprehensive and systematic process of identification/screening of the cases, evaluation, planning, distribution, coordination and monitoring of various services for patients in need of continuing care and other complicated or high-risk conditions (7).

This proactive process operates on different levels (administrative, provision of services and/or clinically) (3,7) and has at least three goals: 1. to improve the compatibility, coordination and agreement among services, 2. to stimulate the choice and flexibility of service provision, and 3. to improve the effectiveness of the services and the patient's results (4, 7, 9).

For example, the researchers specify as evidence for the effectiveness of the managed health care a 50 % decrease in the hospitalisation costs and the drastic reduction in the number of hospitalisations of patients suffering from heart failure, and also take into account a 6-7 % decrease in the costs of the insurance companies. They advocate widely the idea that the management of diseases and activities can be included in programs for social security, including payments or stimuli for the providers of healthcare services, in order to aid in the realisation of integrated care. Also, so as to meet the challenge to provide high-quality care for patients with chronic diseases without encumbering the community with enormous economic burdens (1, 5, 7, 8).

In the last few years, a number of European countries have been developing disease management programs (DMPs) based on Wagner's chronic care model (9).

The DMPs are developed to facilitate the introduction of the evidence-based clinical practice (through application of standardised instructions, records, etc). They improve the coordination among the different participants in the healthcare system and ensure comprehensiveness and continuity of the health care. They are oriented towards early diagnosis, therapy and rehabilitation of the patients. They help the reduction of the level of the risk factors through achieving a higher quality of the medical services, healthy changes in people's behaviour and lifestyle, as well as the environment in which they live (7).

DMPs have three basic characteristics:

- They are based on scientific evidence;
- Coordination and communication among all participants in the healthcare system;
- Continuous, dynamic improvement of the management process.

The key elements of these programs are as follows:

- Comprehensive health care – provided by multidisciplinary and multiprofessional teams, including all health services – health promotion, prevention, diagnosis, treatment and rehabilitation;
- Integrated, coordinated medical services;
- Population-oriented – towards a population defined in accordance with certain criteria /specific health status;
- Active approach and modern means of patient management – health education and training, skills for self-care and self-control of the disease;
- Instructions, recommendations and records based on evidence for effectiveness;
- Information technology and systematic approach in solving the problems;
- Continuous dynamic increase in the quality of healthcare services.

The experience of the countries with disease management programs (DMPs – a program meeting the aforementioned criteria) is in the field of the following chronic diseases: 1. arthritis (of all types), 2. cancer (of all types), 3. cardiovascular diseases (CVD, of all types), 4. chronic obstructive pulmonary disease (COPD), 5. depression and 6. diabetes (of all types) (9).

Table 1. Chronic diseases included in the chronic disease management programs (DMPs) in ten European countries

|                 | Arthritis | Cancer                            | CVD                       | COPD        | Depression                   | Diabetes              | Other                 |
|-----------------|-----------|-----------------------------------|---------------------------|-------------|------------------------------|-----------------------|-----------------------|
| Belgium         | -         | -                                 | -                         | -           | -                            | Diabetes type 2       | Chronic renal disease |
| Estonia         | -         | -                                 | -                         | -           | -                            | -                     | -                     |
| France          | -         | -                                 | -                         | -           | -                            | Diabetes type 1 and 2 | -                     |
| Germany         | -         | Breast cancer                     | CVD heart failure         | COPD Asthma | -                            | Diabetes type 1 and 2 | -                     |
| Hungary         | -         | -                                 | -                         | -           | -                            | -                     | -                     |
| Italy           | -         | -                                 | CVD heart failure; stroke | COPD        | -                            | Diabetes type 1 and 2 | -                     |
| Lithuania       | -         | -                                 | CVD                       | -           | -                            | -                     | -                     |
| The Netherlands | -         | -                                 | CVD                       | COPD        | Depression                   | Diabetes type 2       | -                     |
| Spain           | -         | Cancer                            | Heart failure             | COPD        | Depression                   | Diabetes              | Poly-pathology        |
| Great Britain   | -         | Cancer (unspecified localisation) | CVD Apoplectic stroke     | COPD Asthma | Unspecified mental disorders | Diabetes              |                       |

Source: Rijken P.M. N. Bekkema, Chronic Disease Management Matrix 2010, 2011 NIVEL, Postbus 1568, 3500 BN UTRECHT

Table 1 shows the disease management programs by country. It makes it evident that the most common chronic condition managed by DMPs is diabetes, followed by cardiovascular diseases (or risk

factors for CVD), and COPD, there are no data for DMPs in osteoarthritis and rheumatoid arthritis. Germany applies DMPs for breast cancer. In the United Kingdom (England) the programs are applied for all types of cancer, depression and mental diseases as a whole. In the Netherlands and Spain, special regional DMPs have been developed for depression management. Estonia and Hungary also have programs which match the definition for DMPs. In addition to the programs for management with DMPs including the aforementioned diseases, in Belgium and Spain there are approaches to management of other chronic conditions (9). Belgium has developed a program for improving the management of chronic renal diseases. The Spanish region of Andalusia has introduced a programming approach for provision of better care for people with co-morbidities (patients diagnosed with more than one chronic disease), which often leads to the demand for care at various levels (6, 9).

The research on the disease management programs applied so far in different countries has established the following:

- The greatest number of performed and effective programs are for diabetes, CVD, COPD, chronic heart failure, and cancer;
- DMPs result in improved management and control of the significant chronic diseases;
- DMPs improve and facilitate the implementation of scientifically-based standards of good medical practices of the healthcare professionals;
- Increased awareness and improved ability of the patients to control and monitor their health status;
- Most DMPs demonstrate greater effectiveness in the improvement of the quality of health care for patients with chronic diseases, as compared to the “standard“ or “conventional“ medical service;
- The application of DMPs leads to a reduced number of hospitalisations of participating patients, which is an indicator of better control of the risk factors;
- The successful application of DMPs results in re-orientation of the healthcare system and the medical care from a “reactive“ passive approach – dealing with manifested symptoms, diseases, conditions and complications, to a “proactive“ approach – prevention of potential diseases or complications (7).

All reviewed DMPs cover both the primary and secondary care, with the exception of two Italian programs, which operate mainly within primary medical care. The participation of the general practitioners in DMPs is a required condition. DMPs involves the participation not only of the general practitioners, but also of other specialists such as, for example, internists, surgeons and radiologists (cancer programs), the cardiologists are included in the programs for cardiovascular diseases, and pulmonologists in programs for COPD. The nurses – regardless of their specialisation, are members of the multidisciplinary teams in all programs (9).

The multidisciplinary teams consist of various healthcare specialists depending on the type of the chronic condition. For instance, podiatrists or other therapists who provide foot care, normally participate in the diabetes programs, having in mind that speech therapists participate in the CVD teams. Dietologists and physiotherapist are most often seen as related healthcare workers participating in DMPs. Psychosocial workers such as psychologists, psychotherapists and social workers participate only in some DMPs, for example in the German programs for breast cancer and in the regional program “De Kroonluchter” for COPD in the Netherlands (9).

In the programs for depression or mental diseases, in addition to the general practitioners, the teams include psychiatrists, psychotherapists and nurses specialised in the field of mental health. Only the Belgian care programs for type 2 diabetes include pharmacists in the team. The programs are exclusive of expert opinion on the work capacity, with the exception of the professional therapists that provide rehabilitation in some of the German programs, the programs in the Tuscany area and the regional programs for COPD in the Netherlands (9).

To limit the chronic diseases and the risk factors for them on an EU level, there are also networks uniting the efforts of a number of countries. The CINDI intervention network numbers 33 participating countries, including Bulgaria. Its main goal is to improve the health of the population by reducing avoidable death, morbidity and the health consequences from the most common chronic non-communicable diseases through integrated activities oriented towards decreasing the level of the risk factors that are common for them: smoking, unhealthy eating, reduced physical activity, increased blood pressure, increased cholesterol levels, obesity, etc. (2, 10, 11).

Based on the global and regional strategies and programs for prevention and control of chronic non-communicable diseases, the policy on, development and integration of effective strategies and

programs is formed on a national level. The National Healthcare Strategy (2014-2020) of Bulgaria has among its priorities the promotion of a healthy lifestyle and re-orientation of the healthcare system to the prevention of the socially significant diseases (12). In our country, the adopted national strategies and programs for some specific socially significant diseases or leading risk factors are:

- National strategy and work program for preventive oncological screening;
- National program for limitation of osteoporosis incidence;
- Mental health policy and National action plan for implementation of the mental health policy;
- National program for prevention of chronic non-communicable diseases 2014-2020, etc.

The problem which emerges for Bulgaria lies in the significant discrepancy between the set goals and planned activities in the strategies and programs and their real implementation.

**Conclusion:** The application of disease management programs contributes towards the fulfilment of the priority related to the limitation of chronic diseases and ensuring long-term and accessible medical care for all people in need of it. The management of diseases and healthcare services through programs is a method of building a consensus and communication in each country, through a combination of the actions of various institutions and organizations in the implementation of certain healthcare priorities. The successful application of DMPs leads to re-orientation of the healthcare and medical care from treatment of diseases and complications to a “proactive” approach for prevention of potential diseases and complications.

Taking into account the experience of the countries, Bulgaria needs to develop and apply national and regional strategies and programs for different socially significant diseases such as diabetes, CVD, COPD, arthritis, etc., which comply with the present needs and resources.

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