

COMMENTARY

IGEA - A chronic disease management project for people with diabetes

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Summary. Chronic diseases can be prevented and controlled using available knowledge. Moreover, the solutions are not only effective but can be highly cost-effective. Chronic care model and disease management have emerged, in the last decades, as new models of care delivery. The two models share the objective of improving the quality of care for people with chronic diseases while optimizing health care expenditure. In Italy, within the National Prevention Plan, the Italian Centre for Disease Prevention and Control of the Ministry of Health, and the Istituto Superiore di Sanità (ISS) are developing the IGEA project, which defines a comprehensive strategy for implementing a chronic disease management intervention for people with diabetes.

Key words: diabetes mellitus, disease management, chronic disease.

INTRODUCTION

Globally the prevalence of diabetes is increasing at an alarming rate imposing a large economic burden on the health care system and on families, and the World Health Organization (WHO) in its recent publications has pointed out the need for urgent action to halt the growing threat of this chronic disease [1].

In 2003, among persons between the ages of 20 and 79 years, the estimated prevalence was 5.1% worldwide, though this is expected to increase to 24% by the year 2025 with a prevalence of 6.3% and 333 million persons affected. The WHO estimated that, in 2001, diabetes resulted in 19 996 000 disability-adjusted life years (DALYs) worldwide [2].

The death rate of men with diabetes is 1.9 times the rate for men without diabetes, and the rate for women is 2.6 times that for women without diabetes. Premature mortality caused by diabetes results in an estimated 12-14 years lost. Cardiovascular diseases cause up to 65% of all deaths of people with diabetes.

In Italy, according to the National Statistics Bureau, approximately 2 700 000 persons suffer from diabetes, constituting 4.6% of the population (4.9% of females and 4.4% of males). The age standardized prevalence increased from 4.2% in 2002 to 4.6% in 2007. The prevalence increases with age, reaching 17.6% in persons older than 75 years.

Regarding geographic distribution, the prevalence of diabetes is highest in southern Italy (5.6%), followed by central (4.4%) and northern (4%) Italy.

Diabetes is a paradigmatic example of a chronic disease that is correlated with lifestyle and is more widespread among socially disadvantaged groups. In a study that analysed data from national investigations conducted in eight European countries, it was estimated that persons with a lower level of education have on average a 60% greater risk of diabetes than persons with a higher level of education, with the excess ranging from 16% in Denmark to 99% in Spain [3, 4]. This is also the case in Italy, where persons with a lower level of education (no formal education or an elementary school education) have an approximately 60% greater risk of diabetes.

THE NEED FOR ACTION

Chronic diseases can be prevented and controlled using available knowledge. Moreover, the solutions are not only effective but can be highly cost-effective. Many of the complications of diabetes can be prevented through adherence to monitoring guidelines, which include recommendations for evaluation and treatment of elevated glucose levels, hypertension and hypercholesterolemia, and the early detection and

treatment of microvascular and macrovascular complications. Persons with chronic diseases require not only effective treatment but also continuity of care, and adequate information and support, so that they can achieve self-management to the greatest possible extent. A redesign of the care system is needed to meet the complex needs of persons with chronic diseases. A shift from fragmented healthcare delivery to an organized prevention based multicomponent approach is necessary along with a real partnership between patients and clinicians, and between primary and secondary care.

Chronic care model and disease management have emerged, in the last decades, as new models of care delivery: the former relying principally on the targeting of high-risk subjects, and the latter on comprehensive system change [5-7]. The two models share the objective of improving the quality of care for people with chronic diseases while optimizing health care expenditure. The WHO recommends chronic disease management (also for low income Countries) as an effective intervention for people with diabetes pointing out the main activities as follows:

- the development of evidence-based decision support tools;
- the promotion of multidisciplinary healthcare teams, as an effective means of achieving the goal of improving health-care outcomes;
- the development of information systems that are sustainable and well integrated in the given area and that encourage communication not only among physicians but also between physicians and patients, so as to achieve long-term coordinated care;
- the promotion of patients' self-management as a core element of effective chronic disease care.

THE QUALITY OF CARE

According to the QUADRI study (Quality of Care for Diabetics in Italian Regions), the quality of care for persons with diabetes in Italy is far from optimal [8]. A sample of 3,426 diabetic patients, sampled from registries of persons with health co-payment exemptions for diabetes, was interviewed. The population was middle-aged (median age 57 yrs), had a low educational level (31% had less than 6 years of education), and was followed primarily in public diabetes centres.

Most of the persons interviewed (76%) reported that they had at least one of the major risk factors for complications (*i.e.*, hypertension, hypercholesterolemia and obesity), 42% reported at least two of these factors, and

30% suffered from microvascular or macrovascular complications. Approximately 20% of the persons interviewed had been hospitalised in the year prior to the interview. Fifty-four percent were aware of having hypertension, yet 14% of them were not being treated; 44% reported that their cholesterol level was high, yet 26% of them were not undergoing specific treatment. Moreover, although nearly all of the obese persons had been advised to lose weight, little more than half of them were attempting to do so. Of the persons interviewed, 25% were smokers, which is surprisingly similar to the average percentage of smokers in Italy's general population, and nearly one third of the persons interviewed had a sedentary lifestyle. In the six months prior to the interview, fewer than half of the persons had undergone a thorough examination by a general practitioner or diabetes specialist. Two thirds of the persons had ever heard of glycated haemoglobin (HbA1c), and of these only 66% had undergone this test in the previous four months. Only 5% received all eight main tests recommended by the guidelines within the specified intervals. This study has shown that people with diabetes are engaged in unhealthy behaviours, received inadequate treatment for co-morbidities, and that the translation of guidelines into clinical practice was unsatisfactory.

Despite some limitations, this study has contributed to increasing the knowledge on the various aspects of the care provided in Italy to persons with diabetes, and to formulate national and regional policy to improve the quality of diabetes care.

This awareness led the Ministry of Health, in its 2003-2005 National Health Plan, to make a serious commitment to fighting this disease through the activities of the National Health Service. In particular, the complications of diabetes were included among the priority areas of intervention in the 2005-2007 National Prevention Plan, which includes regional projects focussing on the prevention of diabetes complications through the adoption of chronic disease management programs. Moreover, in September 2006, Italy, together with the other countries of the Regional Office Europe of the World Health Organization and the European Union, approved a comprehensive strategy for fighting non-communicable diseases known as "Gaining Health". With regard to chronic diseases (including diabetes), this strategy focuses on reorienting healthcare services, relying on healthcare models that are suitable for preventing disabilities, for developing primary care, and for increasing the self-management of persons with chronic diseases.

THE IGEA PROJECT

Within the National Prevention Plan, the Italian Centre for Disease Prevention and Control of the Ministry of Health, and the Istituto Superiore di Sanità (ISS) are developing the IGEA project, which defines a comprehensive strategy for implementing a chronic disease management intervention in Italy.

The development of disease management has spawned a variety of definitions; the IGEA project adopted the CDC definition of disease management as “an organized, proactive, multicomponent approach to healthcare delivery, involving all members of a population having a specific disease (or a subset of that population with specific risk factors). Care is focused on, and integrated across, the spectrum of the disease and its complications, prevention of comorbid conditions and relevant aspects of the delivery system”. Changes in models of care, practice redesign, and patient-centred care strategies may be incorporated into disease management interventions [9, 10]. This comprehensive definition bridges the gap between the chronic care model and the classical definition of disease management.

The overall objective of IGEA is to improve the quality of care, placing the patient at the centre of the organisation of care, through the development of an organizational model that: guarantees effective interventions for all persons with diabetes; implements evidence-based interventions; ensures that both the quality of care and improvements in outcome can be measured; promotes the partnership between primary and secondary care in multidisciplinary health-care teams; ensures that the care model can be gradually implemented in the entire Country taking into account regional health organization as well as local needs and capabilities. A series of tools have been realised, as part of the IGEA project, to support the Regional health Authorities toward the implementation of disease management for people with diabetes.

Guidelines for managing type 2 diabetes mellitus in adults

A multidisciplinary working group, selected by the ISS, has formally defined the priority aspects of care for persons with diabetes mellitus and has produced recommendations based on systematic reviews of the literature [11]. The recommendations have been developed using the GRADE method (Grades of Recommendation Assessment, Development and Evaluation). The document contains information and recommendations which, based on the model of disease management,

are geared towards improving the quality of care of persons with diabetes, and it is intended not only for healthcare workers but also for institutional planners and decision makers.

Information system for the management of type 2 diabetes mellitus in adults

The development of an integrated health care system must rely on information system, which allows patient information to be organized, patient care to be planned and tracked, support for self-management to be provided, and follow-up to be scheduled.

A document has been published which provides the basic language, and defines the applicative domain of the information systems that support the disease management of diabetes [12]. The specific objectives of the document are to define the general indications for developing information systems, to identify and define indicators for measuring the degree of realisation of the program and its effectiveness, and to define a data dictionary that represents the overall semantics of the system. The document can be considered as the reference for harmonising the diverse regional experiences and as the basis for future activities of the IGEA project.

Education programme for health-care workers

Training health-care workers is a key element of chronic disease management and team building, and it is a necessary prerequisite for successfully applying a disease management model to healthcare activities. A training plan, and training packages have been defined [13]. A cascade training approach has been adopted training trainers from Italian Regions. The training plan is intended to allow all Italian Regions to implement disease management by training health professionals from several different disciplines and focussing on the evaluation of new operative strategies.

CONCLUSIONS

A number of studies have shown that integrated care can improve the management of chronic conditions such as diabetes and reduce health care costs [5-7, 9, 10, 14]. Moreover, it should be stressed that a national program for the prevention of diabetes complications can contribute to reducing social inequalities. Like other chronic diseases, diabetes is perceived as a problem that mainly affects higher socioeconomic classes. However, it is actually the disadvantaged classes that are most affected. At-risk behaviour tends to be prevalent among these classes for various reasons:

fewer years of education, greater psychosocial stress, limited choice in terms of consumption models, and inadequate access to care and health education. Moreover, these persons have less of a possibility to substitute at-risk behaviours with healthier habits, which are often more costly. As stressed by WHO, chronic disease and poverty exist in a vicious cycle: the poor are most affected by chronic disease, which in turn can represent

an additional economic burden for individuals and families, thus making them more vulnerable to disease.

This approach will require in the next years a thorough and difficult re-design of health care system, but “a long journey begins with a single step” [6].

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