

## Thesis summary

# Evaluation of disease management programmes for chronically ill

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The results presented in this review are based on my thesis defended at Maastricht University on 23 February 2006. The main aim of the study was to assess if disease management programmes (DMPs) for patients with asthma, Chronic Obstructive Pulmonary Disease (COPD) or diabetes mellitus improve quality of care without increasing total health care costs as compared to usual care.

One of the most important elements of the DMPs was the assignment of patients to one specific care provider or a collaborative practice team, consisting of a general practitioner (GP), nurse specialist and medical specialist, as based on complexity of care. Patients with low complexity of care were taken care of by the GP, patients with medium complexity of care received care from the nurse specialist, while the medical specialist treated patients with high complexity of care.

Principles of Health Technology Assessment (HTA) and decision-analysis have been applied to explicitly support decision-making regarding the DMPs.

Literature reviews were undertaken to investigate a range of methodological issues in evaluating disease management programmes. The impact of the disease management programmes on processes and outcomes of care was investigated empirically with quasi-experimental designs. Patients with a diagnosis of asthma, COPD or diabetes mellitus (type 1 or 2) and without severe co-morbidity as heart failure, cancer or end-stage renal disease, were eligible for inclusion. In the asthma/COPD study, 975 patients were included of which 70% completed the 12-month data collection. In the diabetes study, 473 patients were included of which 52% completed two-year follow-up. In both studies, the main reason for dropping out was unwillingness to fill out questionnaires. The long-term cost-effectiveness of the disease management programme for patients with asthma was assessed with a fully probabilistic decision-analytic model.

The literature studies showed that several methodological challenges need to be uptaken in assessing the

cost-effectiveness of DMPs. The results of the empirical studies showed that redesign of care according to principles of disease management is associated with improvements in quality of care, within the existing budget restraints.

Another important finding was that patients assigned to the nurse specialist benefit most from the implementation of the DMPs. The study indicated that the increased attention to patient education and promotion of self-management plays an important role herein as does the combination of nursing and medical skills.

For the readers of the IJIC it is of special interest to learn that in the short-term, disease control of patients improved, as reflected in less exacerbations and hospital admissions for patients with asthma or COPD and better glycaemic control for patients with diabetes. Self-management behaviour, disease-specific knowledge and patient satisfaction improved for patients with asthma, COPD and diabetes. Quality of life improved for patients with COPD and diabetes, while remaining stable in patients with asthma. Healthcare costs decreased among patients with asthma and remained equal for patients with COPD and diabetes. In the long-term, there is a probability of 90% that the asthma DMP is cost-effective as compared to usual care.

Further observations related to integration of care are: (1) continuous monitoring and optimisation of integrated care is necessary because the processes of care and the cost-effectiveness of DMPs are sensitive to changes in the underlying guidelines, (2) existing management and incentive structures in a particular region need to be considered carefully when designing a programme. If a programme does not 'fit' its environment, it will not work optimally and might not fulfil the expectations.

A conclusion relevant to integrated care is that the long-term impact should be considered instead of short-term results when deciding about adoption or rejection of an integrated care programme, since the largest benefits of these innovations are shown to occur in the long-term.

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