

Review: Most disease management programs for providers and patients lead to improvements in care

Weingarten SR, Henning JM, Badamgarav E, et al. **Interventions used in disease management programmes for patients with chronic illness-which ones work? Meta-analysis of published reports.** *BMJ.* 2002;325:925-8.

QUESTION

What is the effectiveness of provider- and patient-targeted interventions used in disease management programs for patients with chronic illness?

DATA SOURCES

Studies were identified by searching MEDLINE, HealthSTAR, and the Cochrane Database from January 1987 to June 2001; hand searching bibliographies of relevant articles and reviews; and consulting experts in the field.

STUDY SELECTION

English-language controlled clinical trials that evaluated the effectiveness of disease management programs in improving care or reducing costs and potentially using multiple treatment methods for patients with common chronic conditions were selected for review. Studies were excluded if they did not use acceptable experimental or quasiexperimental design; exclusively evaluated single-treatment methods or drug-compliance programs; or did not report sufficient information to allow for estimation of at least one relevant measure of program effect and its variance.

DATA EXTRACTION

Data were extracted on specific intervention components, study characteristics, target population, sample size, and measures of program effects on process and outcome of care.

MAIN RESULTS

102 studies met the inclusion criteria and evaluated 118 disease management programs; 92 were for patient education, 47 for health care provider education, 32 for provider feedback, 28 for patient reminders, 19 for provider reminders, and 6 for financial incentives. Results were pooled to calculate effect size using a random-effects model. Provider education, provider feedback, and provider reminders led to improvements in provider adherence to practice guidelines and to improvements in patient disease control (Table). Patient education, patient reminders, and patient financial incentives led to improvements in patient disease control (Table). Results for other disease management programs are unclear because of heterogeneity and limitations in quality and quantity. Few

studies directly compared the effectiveness and costs of different interventions.

CONCLUSIONS

Disease management programs using provider education, provider reminders, and provider feedback as disease management strategies result in improved patient disease control and lead to improved adherence to practice care guidelines. Patient education, patient reminders, and patient financial incentives also lead to improved patient disease control. The relative effectiveness and costs of different types of interventions used for disease management are unclear.

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Effects of disease management programs in health care providers (HCP) and patients*

Outcomes	Effect sizes (95% CI)		
	HCP education	HCP feedback	HCP reminders
Adherence to guidelines	0.44 (0.19 to 0.68)	0.61 (0.28 to 0.93)	0.52 (0.35 to 0.69)
Disease control	0.35 (0.19 to 0.51)	0.17 (0.10 to 0.25)	0.22 (0.1 to 0.37)
Disease control	Patient education	Patient reminders	Patient financial incentives
	0.24 (0.07 to 0.40)	0.27 (0.17 to 0.36)	0.40 (0.26 to 0.54)

*CI defined in Glossary. Length of follow-up not reported.

COMMENTARY

The efficacy and cost impact of clinical decisions have become the focus of every health care delivery system. Insurers, hospitals, physicians, and purchasers (both patients and employers) do not want precious dollars to be wasted on frivolous or ineffective efforts. As a result, frontline clinicians are frequently asked to participate in disease management programs to improve the cost-effectiveness of their care.

The review by Weingarten and colleagues tries to clarify the evidence on the efficacy of these programs. The meta-analysis shows the variegated picture of disease management structure (provider-focused vs patient-focused interventions) and the mixed results of its measured efficacy for several chronic conditions.

The evidence drawn from 118 studies of 12 chronic conditions suggests the following conclusions. First, depression and diabetes have been studied more than any other chronic condition. Depression disease management programs surpassed diabetes and other chronic disease entities in almost every aspect of measured outcome (disease

impact and efficacy, provider adherence, and patient-focused intervention efficacy). Although the authors do not draw this conclusion directly, some of these outcome differences could have resulted from the fact that more depression disease management studies used ≥ 3 interventions (15/25 [60%]) than all the other studies (29/118 [25%]). No other clear indication is offered as to what critical element must be present to make these programs work.

From this review, one should conclude that disease management can produce benefits. However, although applied across a variety of diseases, disease management has not been studied sufficiently in most areas to show its full effect, in terms of both benefit and harm. Clinicians and organizations trying to justify the efforts and expense of staff and time needed to comply with such programs should be requesting evidence of cost-effectiveness before major system changes occur.

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