A depression-management program reduced depression in frequent users of health care but did not reduce health care visits

Katzelnick DJ, Simon GE, Pearson SD, et al. **Randomized trial of a depression management program in high utilizers of medical care.** Arch Fam Med. 2000 Apr;9:345-51.

QUESTION

Does a program to identify and treat depression in frequent users of medical care improve clinical outcomes and reduce total health care use?

DESIGN

Cluster randomized {allocation concealed*}†, blinded (telephone assessment),* controlled trial with 1-year follow-up.

SETTING

Primary-care clinics of 3 health management organizations (HMOs) in the United States (Wisconsin, Washington, and Massachusetts).

PATIENTS

407 patients who were 25 to 63 years of age (mean age 45 y, 77% women), had continuous health plan enrollment for ≥ 2 years, were frequent health care users (ambulatory visits per year above the 85th percentile for previous 2 years), and screened positive for current major depression or major depression in partial remission with a score ≥ 15 on the Hamilton Depression Rating Scale (HDRS). Exclusion criteria included recent treatment for substance abuse, previous treatment for schizophrenia or bipolar disorder, life-threatening medical illness, or active treatment for depression by a mental health specialist. 93% of patients completed the blinded telephone assessment at 12 months.

INTERVENTION

82 physician practices were allocated to the depression-management program (DMP) (n = 218), and 81 were allocated to usual care (n = 189). DMP consisted of physician education (2-hour training session and psychiatrist consultants at each HMO), patient education (a booklet titled *Depression Isn't Just a Medical Problem* and videotaped educational materials), antidepressant treatment (a pharmacotherapy algorithm with adjustment as needed), and treatment coordination.

MAIN OUTCOME MEASURES

Change in scores on the HDRS and number of health care visits.

MAIN RESULTS

Analysis was by intention to treat. Patients in the DMP group had greater improvements in score at 6 weeks (P = 0.04), 3 months (P = 0.02), 6 months (P < 0.001), and 12 months (P < 0.001) than did patients in the usual-care group (Table). Patients in the DMP group had more health care visits (mean increase 1.6 visits) during follow-up than they had had the previous year, whereas patients in the usual-care group had a decrease in health care visits (mean decrease 2.0 visits) (P = 0.02 for the difference between groups).

CONCLUSION

In depressed patients who are frequent users of general medical care, a depression-management program led to greater clinical improvement but also to increased health care visits.

Source of funding: Pfizer Pharmaceuticals Inc.

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*See Glossary.

†Information provided by author.

A depression-management program (DMP) vs usual care for frequent health care users‡

Outcomes	Mean score decrease		Difference in mean score decrease
	DMP	Usual care	
HDRS score at 6 wk	3.3	2.0	1.3
HDRS score at 3 mo	5.6	3.9	1.7
HDRS score at 6 mo	7.3	4.0	3.3
HDRS score at 12 mo	9.2	5.6	3.6

‡HDRS = Hamilton Depression Rating Scale. Scores corrected for intracluster correlation among patients of the same physician. All differences are statistically significant.

COMMENTARY

Depressive illness is common and disabling and is mostly managed in primary care without recourse to specialist services. Received wisdom is that management is suboptimal: Up to 50% of depressive conditions are missed by practitioners, and treatment of diagnosed patients is of inadequate intensity and duration. Educational interventions for practitioners that use clinical guidelines to improve recognition and management have been evaluated, but they have shown no benefit.

At least 3 hypotheses may explain this failure: Education may be insufficient to change practitioner behavior, study design may have been inadequate to detect true benefit, or the principles on which guidelines are based may be at fault. The last reason is likely because most of the evidence base comes from secondary care, reflecting a lack of research in primary care. "Sensitivity" of practitioners has been emphasized at the expense of "specificity," which may result in a failure to target patients who would benefit most from more intensive management.

The studies by Katzelnick and Simon and their colleagues report the efficacy and cost-effectiveness of a practice-based intervention to improve depression management in the managed-care context of 3 U.S. HMOs. In a 2-stage screening procedure, patients with consultation rates above the 85th percentile for ≥ 2 years were identified, and those in whom evidence existed of untreated depressive disorder (*Diagnostic and Statistical Manual, Fourth Edition,* diagnosis and HDRS score ≥ 15) were recruited (about 5% of the total registered population). Half the sample had ≥ 1 comorbid chronic physical illness, presumably accounting in part for their high consultation rates. The study had high completion rates, but only patients enrolled with the HMO for ≥ 2 years were eligible. This study characteristic limits the generalizability of the work to other settings (such as general practice) and biases the results against such groups as the long-term unemployed or the elderly.

DMPs have already been shown to benefit unselected depressed patients in primary care. In this study, patients in the DMP had better outcomes than did those receiving usual care, with significantly greater reductions in depression scores and higher quality-of-life ratings. The authors estimate a number needed to treat of 5 to achieve 1 additional remission, although it is not clear how remission was defined for this

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A depression-management program increased depression-free days and costs in depressed frequent users of general health care

Simon GE, Manning WG, Katzelnick DJ, et al. **Cost-effectiveness of systematic depression treatment for high utilizers of general medical care.** Arch Gen Psychiatry. 2001 Feb;58:181-7.

QUESTION

In depressed patients who are frequent health care users, what is the incremental cost-effectiveness of a depression-management program (DMP)?

DESIGN

Cost-effectiveness analysis of a cluster randomized {allocation concealed*}†, partially blinded (telephone assessment),* controlled trial with 12-month follow-up.

SETTING

3 health maintenance organizations (HMOs) in the United States.

PATIENTS

407 patients (mean age 45 y, 77% women) who were frequent users of general medical care (> 85th percentile for the number of outpatient visits in each of the previous 2 years) and were depressed (Hamilton Depression Rating Scale [HDRS] score ≥ 15). Exclusion criteria included active treatment for depression in previous 90 days or contraindications to depression treatment. Analyses included 92% of patients for health care use and 91% for cost-effectiveness.

INTERVENTION

{82}‡ physician practices were allocated to a DMP (n = 218), and {81}‡ were allocated to usual care (n = 189). DMP consisted of patient and physician education and telephone-care management, antidepressant treatment for most patients, and psychiatric consultation for nonresponders.

MAIN COST AND OUTCOME MEASURES

The main outcome was number of depression-free days (estimated by interpolation). Direct costs were assessed for all services provided or paid for by health plans in 1996 U.S. dollars. Costs for time in treatment were estimated as lost wages. Results were adjusted for age, sex, study site, baseline measures of depression severity and health status, and clustering of patients by physicians.

MAIN RESULTS

The DMP group had more depression-free days than did the usual-care group (229.3 vs 181.9 d; mean adjusted difference 47.4 d, 95% CI 26.6 to 68.2 d). The Table shows the incremental costs of the DMP relative to usual care.

CONCLUSIONS

In depressed patients who are frequent users of general health care, a depression-management program was effective for improving clinical outcomes at increased health-services cost. Outpatient and inpatient services each cost approximately $20 per additional depression-free day.

Source of funding: Pfizer Pharmaceuticals.

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*See Glossary.

†Information provided by author.

‡**Katzelnick DJ, Simon GE, Pearson SD, et al.** Arch Fam Med. 2000;9:345-51.

Incremental cost of a depression-management program relative to usual care

Outcomes at 12 mo	Adjusted incremental cost (95% CI)§	Adjusted cost per additional depression-free day (CI)§
Outpatient health services	$1008 (534 to 1383)	$21.12 (10.53 to 37.61)
Outpatient plus inpatient services	$1974 (848 to 3171)	$41.34 (16.04 to 81.03)
Outpatient and inpatient services plus time in treatment costs	$2475 (880 to 4138)	$51.84 (17.37 to 108.47)

§Adjusted for age, sex, study site, baseline depression severity, and costs for the 12 months before randomization.

COMMENTARY

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calculation. The 2 studies were screening studies, however, and the "number needed to screen" to achieve 1 additional remission is close to 17. Consultation rates in the intervention group increased, whereas those in the usual-care group decreased slightly.

It is not possible to identify which component of the program was most beneficial, but it seems probable on clinical grounds that the initial visit for assessment and initiation of management (which did not occur in the usual-care group) would have had considerable effect.

In analyzing the cost-effectiveness of the program, the construct of "depression-free days" was used. It is important to understand how these days were derived. As depression scores were only assessed at 6 weeks and 3, 6, and 12 months, most of the data were interpolated. HDRS scores ≤7 were taken as "depression-free" (score 0), whereas scores ≥ 22 were taken as "fully symptomatic" (score 1). Linear interpolation was used to model recovery, allowing calculation of a number between 0 and 1 for each day; "depression-free days" were then calculated by dividing the total scores by the number of days in the period between estimates. This construct is clearly notional, and its name is misleading because many of the periods contained no true depression-free days, only partially depression-free days.

The costs of the intervention appear high, and no evidence existed of the hoped-for "cost offset" effect by reduction in other sources of health care costs, perhaps not surprising given the high prevalence of comorbid physical illness. The authors observe that the study was insufficiently powered to compare frequency of inpatient admission, which is costly; this lack might have led to failure to detect benefits. The study also had only a 1-year follow-up, and benefits may take longer to be detected.

The clinical bottom line is that it is possible to identify unmet needs and improve outcomes in this segment of the primary-care population, but substantial additional resources are required. Although these are not out of line with the costs of treating other important conditions, priorities have to be established to permit shifting of existing resources away from other therapeutic areas or investment of greater resources in this one.

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