ANNALS OF FAMILY MEDICINE

Online Supplementary Material

Rost K, Pyne JM, Dickinson LM, LoSasso AT. Cost-effectiveness of enhancing primary care depression management on an ongoing basis. *Ann Fam Med.* 2005;3:7-14.

http://www.annfammed.org/cgi/content/full/3/1/7/DC1

Appendix. Covariates to Control for Sociodemographic and Clinical Differences Between Patients in Practices Randomized to Enhanced and Usual Care

At baseline, the 96 patients in usual care practices were comparable to the 115 patients in the enhanced care practices on all covariates listed in the text, except usual care patients were somewhat older (45.2 years vs 41.5 years, $P = .04$), less depressed (modified Center for Epidemiologic Studies-Depression [mCES-D] scale 100-point depression severity scores of 51.5 vs 56.9, $P = .04$), and had more physical comorbidities (2.4 vs 1.8, $P = .002$). Between-group differences in sociodemographic and clinical variables were controlled by including these covariates in all models, in addition to other sociodemographic and clinical covariates that predicted the outcomes at $P < .20$. Thus, all models included the following baseline sociodemographic and clinical covariates: age, gender, minority status, education, marital status, insurance status, paid employment status, annual household income, depression severity, physical comorbidity, and physical role functioning.

Statistical Modeling

We estimated the impact of enhanced care on days free of depression impairment using mixed-effects growth curve models, examining the joint significance of intervention × time and intervention × time × time terms in the model. We estimated the impact of enhanced care on cost using mixed-effects repeated measures models, reflecting the difficulty of fitting time-trend models to the temporary spike we observed, evaluating the intervention × time term in the repeated measures model. We calculated days free of depression impairment by determining the area under the curve for the growth curve function over the relevant interval, adjusted for covariates and baseline differences. To describe between-group differences in days free of depression impairment, we directly calculated differences in predicted days between the 2 groups. To describe between-group differences in costs, we directly calculated differences in retransformed costs. Analysis shows no evidence of nonignorable missingness for the 24 months.

Sensitivity Analysis

We conducted a sensitivity analysis examining the effect of enhanced care on generic QALYs by deriving preference-weighted index scores from a health-related quality-of-life instrument.[37,38] Specifically, we converted SF-36 scores (SF-36 Health Survey, the 36-item short form of the Medical Outcomes Study) at each wave to a preference-weighted index score using visual analogue scale quality-adjustment weights derived from a community sample[39] reflecting 9,000 possible health states. We estimated the impact of enhanced care on generic QALYs using random intercept time-trend (growth curve) models[40,41] in SAS PROC MIXED. To describe between-group differences in generic QALYs, we estimated the area between the curves[42] from the preference-weighted model. Enhanced care significantly improved generic QALYs during the 2 years (difference in -2 log likelihood = 9.8, $df = 2$, $P < .02$). In the bootstrap sample, the mean incremental effect of enhanced care relative to usual care for 2 years on the generic QALY measure was 0.10, with year 2 QALYs being greater than year 1 QALYs (.069 vs .031, respectively). Evaluated by generically derived QALYs, the cost-effectiveness of enhanced care ranged from $4,700 (medication-adjusted costs) to $7,010 (nonadjusted costs) per QALY. Evaluated by depression-specific QALYs, the cost-effectiveness of enhanced care ranged from $9,592 (medication-adjusted costs) to $14,306 (nonadjusted costs) per QALY.