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## Cost-effectiveness of a program to prevent depression relapse in care.

**Simon GE, Von Korff M, Ludman EJ, Katon WJ, Rutter C, Unutzer J, Lin T, Walker E.**

Center for Health Studies, Group Health Cooperative, Seattle, Washington 98101.  
simon.g@ghc.org

**OBJECTIVE:** Evaluate the incremental cost-effectiveness of a depression relapse prevention program in primary care. **MATERIALS AND METHODS:** Primary care patients initiating antidepressant treatment completed a standardized telephone assessment 6-8 weeks later. Those recovered from the current episode but at high risk for relapse (on history of recurrent depression or dysthymia) were offered randomization to a relapse prevention intervention. The intervention included systematic patient education, two psychoeducational visits with a depression prevention specialist, shared decision making regarding maintenance pharmacotherapy, and telephone and mail monitoring of medication adherence and depressive symptoms. Outcomes in both groups were assessed via blinded telephone assessments at 3, 6, 9, and 12 months and health plan cost accounting data. **RESULTS:** Intervention patients experienced 13.9 additional depression-free days during a 12-month period (95% CI, -1.5 to 29.3). Incremental costs of the intervention were \$273 (95% CI, \$102 to \$418) for depression treatment cost and \$160 (95% CI, -\$173 to \$512) for total outpatient costs. Incremental cost-effectiveness was \$24 per depression-free day (95% CI, -\$59 to \$496) for depression treatment and \$14 per depression-free day (95% CI, -\$35 to \$248) for total outpatient costs. **CONCLUSIONS:** A program to prevent depression relapse in primary care increases in days free of depression and modest increases in treatment costs. These differences reflect high rates of treatment in usual care. Along with other recent findings, these findings suggest that improved care of depression in primary care is a prudent investment of health care resources.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

PMID: 12395027 [PubMed - indexed for MEDLINE]

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□ 2: Gen Hosp Psychiatry 2002 Sep-Oct;24(5):328-35

Rel:

 ELSEVIER SCIENCE  
FULL-TEXT ARTICLE

**Course of depression, health services costs, and work productivity in an international primary care study.**

**Simon GE, Chisholm D, Treglia M, Bushnell D; The LIDO Group.**

Center for Health Studies, Group Health Cooperative of Puget Sound, Seattle  
simon.g@ghc.org

The Longitudinal Investigation of Depression Outcomes (LIDO) Study examined outcomes and economic correlates of previously untreated depression among patients in Barcelona, Spain; Be'er Sheva, Israel; Melbourne, Australia; Porto Alegre, Brazil; St. Petersburg, Russia; and Seattle, USA. Across all sites, 968 patients with depressive disorder completed assessments of depression severity (Composite Diagnostic Interview and Center for Epidemiologic Studies Depression Scale) at baseline, 9 months, and 12 months, and assessments of health services utilization and work days missed. Follow-up depression status was characterized as persistent depression (n=345), partial remission (n=283), or full remission (n=340). At site, patients with more favorable depression outcomes had fewer days missed; however, this relationship did not reach the 5% level of statistical significance and reached the 10% significance level only at Porto Alegre. Patients with more favorable depression outcomes also had lower health services costs, but this relationship did not reach 5% significance level only in St. Petersburg. While the lack of statistical significance does not permit definitive conclusions, our findings are consistent with recent studies suggesting that recovery from depression is associated with lower health services costs and less time away from work due to illness.

Publication Types:

- Multicenter Study

PMID: 12220799 [PubMed - indexed for MEDLINE]

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□ 3: Med Care 2002 Sep;40(9):752-60

Rel:

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**Effects of efforts to increase response rates on a workplace chronic disease screening survey.**

**Wang PS, Beck AL, McKenas DK, Meneades LM, Pronk NP, Saylor JS, Walters EE, Kessler RC.**

Department of Health Care Policy, Harvard Medical School, Boston, Massachusetts, USA.

OBJECTIVE: Expanded health risk appraisal (HRA) surveys can help employers

chronic conditions for outreach or disease management interventions by providing the prevalences of conditions and their effects on work performance. However, there are concerns about the accuracy of this data because most HRAs have low response rates. We evaluated these concerns by examining the prevalences and work impairment associated with chronic conditions across four HRA subsamples that differed in intensity of recruitment effort. **METHODS:** Two thousand five hundred thirty-nine workers were invited to complete an expanded HRA survey that included questions about chronic conditions, work impairments, and demographics. Condition prevalences and associations between conditions and work impairment were compared across subsamples after a single mailing, after two mailings, and in a telephone interview after the first mailing either with or without a 20 dollars incentive. **RESULTS:** Consistent with previous studies, response rates varied dramatically across the four subsamples (from 20.1% with single mailing to 67.7% with telephone administration and a financial incentive). However, estimated prevalences of chronic conditions, levels of work impairment, and associations between chronic conditions on work impairment did not differ with intensity of recruitment effort. **CONCLUSIONS:** Expanded HRAs can provide useful data on the prevalence of work impairments associated with chronic conditions even if response rates are low. Confirmation of these results is required, however, in new samples. Additional research is also needed on innovative and cost-effective strategies to improve HRA response rates.

PMID: 12218766 [PubMed - indexed for MEDLINE]

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□ 4: Am J Geriatr Psychiatry 2002 Sep-Oct;10(5):521-30

Reli

Full text article at  
[ajgp.psychiatryonline.org](http://ajgp.psychiatryonline.org)

### **Depressive symptoms and mortality in a prospective study of 2,558 adults.**

**Unutzer J, Patrick DL, Marmon T, Simon GE, Katon WJ.**

Center for Health Services Research, UCLA Neuropsychiatric Institute, 10924 Wilshire Boulevard, Suite 300, Los Angeles, CA 90024, USA. [unutzer@ucla.edu](mailto:unutzer@ucla.edu)

**OBJECTIVE:** The authors report results from a 7-year prospective study of depression and mortality in 2,558 Medicare recipients age 65 and older. **METHODS:** This report is based on a secondary data analysis of a randomized controlled trial that evaluated the effectiveness of preventive services for older enrollees in an HMO. **RESULTS:** Participants with mild-to-moderate depression at baseline did not have an increased risk of mortality compared with those without significant depression. The 3% of older adults with severe depressive syndromes, however, had significant increases in mortality after adjusting for demographics, health risk behaviors, and chronic medical disorders. **CONCLUSION:** The increase in mortality in this group of older adults was comparable to that in participants with chronic medical disorders such as emphysema or heart disease.

#### **Publication Types:**

- Clinical Trial
- Randomized Controlled Trial

PMID: 12213686 [PubMed - indexed for MEDLINE]

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□ 5: Bipolar Disord 2002 Aug;4(4):226-36

Reli



**Design and implementation of a randomized trial evaluating sys  
for bipolar disorder.**

**Simon GE, Ludman E, Unutzer J, Bauer MS.**

Center for Health Studies, Group Health Cooperative, Seattle, WA 98101, U  
simon.g@ghc.org

**OBJECTIVES:** Everyday care of bipolar disorder typically falls short of evid  
practice. This report describes the design and implementation of a randomize  
evaluating a systematic program to improve quality and continuity of care for  
disorder. **METHODS:** Computerized records of a large health plan were used  
patients treated for bipolar disorder. Following a baseline diagnostic assessm  
and consenting patients were randomly assigned to either continued usual car  
multifaceted intervention program including: development of a collaborative  
monthly telephone monitoring by a dedicated nurse care manager, feedback c  
results and algorithm-based medication recommendations to treating mental l  
providers, as-needed outreach and care coordination, and a structured psycho  
group program (the Life Goals Program by Bauer and McBride) delivered by  
manager. Blinded assessments of clinical outcomes, functional outcomes, and  
process were conducted every 3 months for 24 months. **RESULTS:** A total o  
(64% of those eligible) consented to participate and 43% of enrolled patients  
current major depressive episode, manic episode, or hypomanic episode. An  
reported significant subthreshold symptoms, and 18% reported minimal or no  
symptoms. Of patients assigned to the intervention program, 94% participate  
monitoring and 70% attended at least one group session. **CONCLUSIONS:** I  
based sample of patients treated for bipolar disorder, approximately two-third  
participate in a randomized trial comparing alternative treatment strategies. N  
patients accepted regular telephone monitoring and over two-thirds joined a s  
group program. Future reports will describe clinical effectiveness and cost-ef  
the intervention program compared with usual care.

**Publication Types:**

- Clinical Trial
- Evaluation Studies
- Multicenter Study
- Randomized Controlled Trial

PMID: 12190711 [PubMed - indexed for MEDLINE]

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□ 6: Gen Hosp Psychiatry 2002 Jul-Aug;24(4):213-24

Reli

Comment in:

- [Gen Hosp Psychiatry. 2002 Jul-Aug;24\(4\):194-6.](#)



### **Evidence review: efficacy and effectiveness of antidepressant treatment in primary care.**

**Simon GE.**

Center for Health Studies, Group Health Cooperative, Seattle, WA, USA

This review considers evidence for the efficacy of pharmacotherapy among patients with depressive disorders and reviews knowledge regarding the efficacy of current practice. Strong evidence supports the efficacy of antidepressant pharmacotherapy for primary care patients with major depression and dysthymia with some evidence for the efficacy of pharmacotherapy of less severe depression. In general, available antidepressant treatments are equal in both efficacy and effectiveness. Treatment selection for any individual remains largely empirical, with few clinical characteristics predicting better response to specific treatments. Strong evidence supports continuation treatment (at least six months of pharmacotherapy) for all patients and maintenance treatment (at least 24 months of pharmacotherapy) for those with chronic or recurrent depression. Unfortunately, few patients in primary care or specialty practice receive recommended levels of pharmacotherapy or recommended frequency of follow-up care. A number of recent studies have evaluated strategies to improve the quality of antidepressant treatment in primary care. Educational programs (including academic detailing and continuing medical education) have had little impact on patient outcomes. Key elements of effective improvement programs include specific, evidence-based treatment protocols, patient education and active follow-up care.

Publication Types:

- Review
- Review, Tutorial

PMID: 12100832 [PubMed - indexed for MEDLINE]

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☐ 7: Am J Psychiatry 2001 Oct;158(10):1638-44

Reli

Full text article at  
[ajp.psychiatryonline.org](http://ajp.psychiatryonline.org)

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### **Cost-effectiveness of a collaborative care program for primary care patients with persistent depression.**

**Simon GE, Katon WJ, VonKorff M, Unutzer J, Lin EH, Walker EA, Bushnell C, Ludman E.**

Center for Health Studies, Group Health Cooperative, Seattle, Washington 98101, USA. [simon.g@ghc.org](mailto:simon.g@ghc.org)

OBJECTIVE: The authors evaluated the incremental cost-effectiveness of stepped

collaborative care for patients with persistent depressive symptoms after usual management. **METHOD:** Primary care patients initiating antidepressant treatment completed a standardized telephone assessment 6-8 weeks after the initial prescription. Those with persistent major depression or significant subthreshold depressive symptoms were randomly assigned to continued usual care or collaborative care. The collaborative care included systematic patient education, an initial visit with a consulting psychiatrist, 6 months of shared care by the psychiatrist and primary care physician, and monthly follow-up visits and adherence to medication regimen. Clinical outcomes were assessed through blinded telephone assessments at 1, 3, and 6 months. Health services costs were assessed through health plan claims and accounting data. **RESULTS:** Patients receiving collaborative care experienced a mean of 16.7 additional depression-free days over 6 months. The mean incremental cost of depression treatment in this program was \$357. The additional cost was attributable to greater expenditures for antidepressant prescriptions and outpatient visits. No offsetting decrease in use of other health services was observed. The incremental cost-effectiveness was \$21.44 per depression-free day. **CONCLUSIONS:** A stepped collaborative care program for depressed primary care patients led to substantial increases in treatment effectiveness and moderate increases in costs. Findings are consistent with those of other randomized trials. Improving outpatient depression treatment in primary care requires investment of additional resources, but the return on this investment is comparable to that of many other widely accepted interventions.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

PMID: 11578996 [PubMed - indexed for MEDLINE]

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☐ 8: Arch Gen Psychiatry 2001 Apr;58(4):395-401

Rel:

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**Treatment process and outcomes for managed care patients receiving antidepressant prescriptions from psychiatrists and primary care physicians.**

**Simon GE, Von Korff M, Rutter CM, Peterson DA.**

Center for Health Studies, Group Health Cooperative, 1730 Minor Ave, Suite 100, Seattle, WA 98101-1448, USA. [simon.g@ghc.org](mailto:simon.g@ghc.org)

**BACKGROUND:** While many studies describe deficiencies in primary care depression treatment, little research has applied similar standards to psychiatric practice. **OBJECTIVE:** To compare baseline characteristics, process of care, and outcomes for managed care patients who received new antidepressant prescriptions from psychiatrists and primary care physicians. **METHODS:** At a prepaid health plan in Washington State, patients with initial antidepressant prescriptions from psychiatrists (n = 165) and primary care physicians (n = 204) completed a baseline assessment, including the Structured Clinical Interview (SCID) and DSM-IV depression module, a 20-item depression assessment from the Symptom



Checklist-90, and the Medical Outcomes Survey 36-Item Short-Form Health functional status questionnaire. All measures were repeated after 2 and 6 months. Computerized data were used to assess antidepressant refills and follow-up visits. RESULTS: At baseline, psychiatrists' patients reported slightly higher functional impairment and greater prior use of specialty mental health care. In addition, psychiatrists' patients made more frequent follow-up visits, and the proportion of more visits in 90 days was 57% vs 26% for primary care physicians' patients. The proportion receiving antidepressant medication at an adequate dose for 90 days was similar (49% vs 48%). The 2 groups showed similar rates of improvement in symptom severity and functioning. CONCLUSIONS: In this sample, clinical differences between patients treated by psychiatrists and primary care physicians were minimal. Shortcomings in depression treatment frequently noted in primary care (inadequate follow-up care and high rates of inadequate antidepressant treatment) were also common in specialty practice. Possible selection bias limits any conclusions about relative effectiveness or cost-effectiveness.

PMID: 11296101 [PubMed - indexed for MEDLINE]

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☐ 9: J Occup Environ Med 2001 Jan;43(1):2-9

Rel:

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### **Depression and work productivity: the comparative costs of treatment versus nontreatment.**

**Simon GE, Barber C, Birnbaum HG, Frank RG, Greenberg PE, Rose R, Kessler RC.**

Center for Health Studies, Group Health Cooperative of Puget Sound, USA.  
simon.g@ghc.org

This article discusses the impact of depression on work productivity and the improved work performance associated with effective treatment. We undertook a review of the literature by means of a computer search using the following key terms: work loss, sickness absence, productivity, performance, and disability. Publications were considered in four categories: (1) naturalistic cross-sectional studies that examined self-reported work impairment among depressed workers; (2) naturalistic longitudinal studies that found a synchrony of change between depression and work impairment; (3) uncontrolled treatment studies that found reduced work impairment with successful treatment; and (4) controlled trials that usually, but not always, found greater work impairment among treated patients. Observational data suggest that productivity following effective depression treatment could far exceed direct treatment costs. Randomized effectiveness trials are needed before we can conclude definitively that depression treatment results in productivity improvements sufficient to offset treatment costs.

#### **Publication Types:**

- Review
- Review, Tutorial

PMID: 11201765 [PubMed - indexed for MEDLINE]

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□ 10: Arch Gen Psychiatry 2001 Feb;58(2):181-7

Reli

Comment in:

- ACP Journal Club 2001 Sep-Oct;135(2):49

ARCH GEN PSYCH

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### **Cost-effectiveness of systematic depression treatment for high utilizers of general medical care.**

**Simon GE, Manning WG, Katzelnick DJ, Pearson SD, Henk HJ, Helstad**

Center for Health Studies, Group Health Cooperative, 1730 Minor Ave, Suite 1000, Seattle, WA 98101-1448, USA. [simon.g@ghc.org](mailto:simon.g@ghc.org)

**BACKGROUND:** Expanding access to high-quality depression treatment while maintaining the balance of incremental benefits and costs. We examine the incremental cost-effectiveness of an organized depression management program for high utilizers of general medical care. **METHODS:** Computerized records at 3 health maintenance organizations were used to identify adult patients with outpatient medical visit rates above the 85th percentile for 2 consecutive years. A 2-step screening process identified patients with current major depressive disorders, who were not in active treatment. Eligible patients were randomly assigned to continued usual care ( $n = 189$ ) or to an organized depression management program ( $n = 218$ ). The program included patient education, antidepressant pharmacotherapy, and psychiatric consultation as needed. Clinical outcomes (assessed using the Hamilton Depression Rating Scale on 4 occasions throughout 12 months) were measured as "depression-free days." Health services utilization and costs were measured using health plan-standardized claims. **RESULTS:** The intervention program resulted in an adjusted increase of 47.7 depression-free days throughout 12 months (95% confidence interval [CI], 28.2-67.8 days). Estimated cost increases were \$1008 per year for outpatient health services, \$1974 per year for total health services (\$848-\$3171), and \$2475 for health services plus time-in-treatment costs (95% CI, \$4138). Including total health services and time-in-treatment costs, estimated cost per depression-free day was \$51.84 (95% CI, \$17.37-\$108.47). **CONCLUSIONS:** Among high utilizers of medical care, systematic identification and treatment produce significant and sustained improvements in clinical outcomes as well as increases in health services costs.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

PMID: 11177120 [PubMed - indexed for MEDLINE]

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□ 11: Gen Hosp Psychiatry 2000 May-Jun;22(3):153-62

Reli



### **Recovery from depression, work productivity, and health care c primary care patients.**

**Simon GE, Revicki D, Heiligenstein J, Grothaus L, VonKorff M, Katon  
TR.**

Center for Health Studies, Group Health Cooperative, Seattle, Washington 98  
USA.

We describe a secondary analysis of data from a randomized trial conducted  
primary care clinics of a Seattle area HMO. Adults with major depression (n=  
beginning antidepressant treatment completed structured interviews at baseline  
12, 18, and 24 months. Interviews examined clinical outcomes (Hamilton De  
Rating Scale and depression module of the Structured Clinical Interview for  
employment status, and work days missed due to illness. Medical comorbidity  
using computerized pharmacy data, and medical costs were assessed using th  
computerized accounting data. Using data from the 12-month assessment, pa  
classified as remitted (41%), improved but not remitted (47%), and persistent  
(12%). After adjustment for depression severity and medical comorbidity at b  
patients with greater clinical improvement were more likely to maintain paid  
( $P=.007$ ) and reported fewer days missed from work due to illness ( $P<.001$ ).  
better 12-month clinical outcomes had marginally lower health care costs dur  
year of follow-up ( $P=.06$ ). We conclude that recovery from depression is asso  
significant reductions in work disability and possible reductions in health car  
Although observational data cannot definitively prove any causal relationship  
longitudinal results strengthen previous findings regarding the economic burd  
depression on employers and health insurers.

Publication Types:

- Clinical Trial
- Controlled Clinical Trial

PMID: 10880708 [PubMed - indexed for MEDLINE]

□ 12: BMJ 2000 Feb 26;320(7234):550-4

Reli

Comment in:

- ACP J Club. 2000 Sep-Oct;133(2):73
- [BMJ. 2000 Feb 26;320\(7234\):526-7.](#)
- [BMJ. 2000 Feb 26;320\(7234\):527-8.](#)

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### **Randomised trial of monitoring, feedback, and management of telephone to improve treatment of depression in primary care.**

**Simon GE, VonKorff M, Rutter C, Wagner E.**

Center for Health Studies, Group Health Cooperative, Seattle, WA 98101, US  
simon.g@ghc.org

**OBJECTIVE:** To test the effectiveness of two programmes to improve the treatment of acute depression in primary care. **DESIGN:** Randomised trial. **SETTING:** Primary care clinics in Seattle. **PATIENTS:** 613 patients starting antidepressant treatment. **INTERVENTION:** Patients were randomly assigned to continued usual care or two interventions: feedback only and feedback plus care management. Feedback only consisted of feedback and algorithm based recommendations to doctors on the basis of data from computerised records of pharmacy and visits. Feedback plus care management consisted of systematic follow up by telephone, sophisticated treatment recommendations and support by a care manager. **MAIN OUTCOME MEASURES:** Blinded interview by telephone 3 and 6 months after the initial prescription included a 20 item depression module from the Hopkins symptom checklist and the structured clinical interview for DSM-IV depression module. Visits, antidepressant prescriptions, and overall care were assessed from computerised records. **RESULTS:** Compared with usual care, feedback only had no significant effect on treatment received or patient outcome. Receiving feedback plus care management had a higher probability of both receiving moderate doses of antidepressants (odds ratio 1.99, 95% confidence interval 1.01 to 3.94) and a 50% improvement in depression scores on the symptom checklist (2.22 lower mean depression scores on the symptom checklist at follow up, and a 1.5 fold probability of major depression at follow up (0.46, 0.24 to 0.86). The incremental cost of feedback plus care management was about \$80 (pound50) per patient. **CONCLUSIONS:** Monitoring and feedback to doctors yielded no significant benefits for patient care starting antidepressant treatment. A programme of systematic follow up and care management by telephone, however, significantly improved outcomes at moderate cost.

Publication Types:

- Clinical Trial
- Multicenter Study
- Randomized Controlled Trial

PMID: 10688563 [PubMed - indexed for MEDLINE]

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☐ **13:** Psychiatr Serv 1999 Oct;50(10):1303-8

Rel:

Full text article at  
[psychservices.psychiatryonline.org](http://psychservices.psychiatryonline.org)

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**Health care utilization and costs among patients treated for bipolar disorder in an insured population.**

**Simon GE, Unutzer J.**

Center for Health Studies of the Group Health Cooperative of Puget Sound, Seattle, Washington 98101, USA. simon.g@ghc.org

**OBJECTIVE:** The study examined health care utilization and costs among patients with bipolar-spectrum disorders in an insured population. **METHODS:** Computerized records of prescriptions and on outpatient and inpatient diagnoses from a large health plan were used to identify patients treated for cyclothymia, bipolar disorder, or schizoaffective disorder. Three age- and sex-matched comparison groups consisting of general medical patients treated for depression, and patients treated for diabetes were selected from the same health plan members. Utilization and cost of health services for the four groups over a 1-year period were assessed using computerized accounting records. **RESULTS:** Total health care costs for patients in the bipolar disorder group (\$3,416+/- \$6,862) were significantly higher than those in any of the comparison groups. Specialty mental health and substance abuse services accounted for 45 percent of total costs in the group with bipolar disorder (SD=\$1,566+/- \$3,243), compared with 10 percent in the group with depression and 5 percent in the group with diabetes. In the bipolar disorder group, 5 percent of patients accounted for approximately 90 percent of costs for specialty mental health and substance abuse services, 90 percent of inpatient costs for specialty mental health and substance abuse services, and 90 percent of out-of-pocket costs for inpatient care. In the bipolar disorder group, parity coverage for inpatient mental health and substance abuse services would increase overall health care costs by 6 percent. **CONCLUSIONS:** Health care costs for patients with bipolar disorder exceed those for patients treated for depression or diabetes, and specialty mental health and substance abuse treatment costs account for this difference. Costs to the insurer borne by patients are accounted for by a small proportion of patients. Eliminating discriminatory mental health coverage would have a small effect on overall health care costs.

PMID: 10506298 [PubMed - indexed for MEDLINE]

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□ 14: Health Aff (Millwood) 1999 Sep-Oct;18(5):163-71

Reli

### **Depression in the workplace: effects on short-term disability.**

**Kessler RC, Barber C, Birnbaum HG, Frank RG, Greenberg PE, Rose I, GE, Wang P.**

Department of Health Care Policy, Harvard Medical School, Massachusetts,

We analyzed data from two national surveys to estimate the short-term work disability associated with thirty-day major depression. Depressed workers were found to have between 1.5 and 3.2 more short-term work-disability days in a thirty-day period than nondepressed workers had, with a salary-equivalent productivity loss averaging between \$1,000 and \$2,000. These workplace costs are nearly as large as the direct costs of successful depression treatment, which suggests that encouraging depressed workers to obtain treatment is cost-effective for some employers.

PMID: 10495604 [PubMed - indexed for MEDLINE]

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Reli

□ 15: J Gen Intern Med 1999 Aug;14(8):461-8



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### **Depression among high utilizers of medical care.**

**Pearson SD, Katzelnick DJ, Simon GE, Manning WG, Helstad CP, Henl**

Department of Ambulatory Care and Prevention, Harvard Pilgrim Health Care, Boston, MA 02215, USA.

**OBJECTIVE:** To determine the prevalence of unrecognized or unsuccessfully treated depression among high utilizers of medical care, and to describe the relation between depression, medical comorbidities, and resource utilization. **DESIGN:** Survey of three HMOs located in different geographic regions of the United States. **SETTING:** Three HMOs located in different geographic regions of the United States. **PA** total of 12,773 HMO members were identified as high utilizers. Eligibility criteria for depression screening were met by 10,461 patients. **MEASUREMENTS AND MAIN RESULTS:** Depression status was assessed with the Structured Clinical Interview from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Depression screening was completed in 7,203 patients who were high utilizers of medical care, of whom 1,465 (20.3%) screened positive for current major depression or major depressive disorder in partial remission. Among depressed patients, 621 (42.4%) had had a visit with a health specialist or a diagnosis of depression or both within the previous 2 years. The prevalence of well-defined medical conditions was the same in patients with and without evidence of depression (41.5% vs 41.5%,  $p = .87$ ). However, high-utilizers who had not made a visit for a nonspecific complaint during the previous 2 years had a significantly lower risk of depression (13.1% vs 22.4%,  $p < .001$ ). Patients with major depression or depression in partial remission had significantly higher number of office visits and hospital days per 1,000 than patients without depression. **CONCLUSIONS:** Although there was evidence that mental health problems had previously been treated in many of the patients, a large percentage of high utilizers still suffered from untreated depression that either went unrecognized or was not being treated successfully. High-utilizers who had not made visits for nonspecific complaints were at significantly lower risk of depression. Depression among high utilizers was associated with higher resource utilization.

PMID: 10491229 [PubMed - indexed for MEDLINE]

□ 16: Arch Fam Med 1999 Jul-Aug;8(4):319-25

Reli

Comment in:

- [Arch Fam Med. 1999 Jul-Aug;8\(4\):326-7.](#)

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### **Long-term outcomes of initial antidepressant drug choice in a "naturalistic" randomized trial.**

**Simon GE, Heiligenstein J, Revicki D, VonKorff M, Katon WJ, Ludman L, Wagner E.**

Center for Health Studies, University of Washington, Seattle, USA. [simon.g@u.washington.edu](#)

**OBJECTIVE:** To compare the long-term clinical, quality-of-life, and economic outcomes after an initial prescription for fluoxetine, imipramine hydrochloride, or desipramine hydrochloride. **DESIGN:** Randomized, controlled trial. **SETTING:** Primary care staff-model health maintenance organization in the Seattle, Wash, area. **PATIENTS:** One hundred seventy-one adults beginning antidepressant drug treatment for depression. **INTERVENTION:** Random assignment of initial medication (desipramine, fluoxetine, or imipramine), with treatment (dosing, medication changes or discontinuation, and visits) managed by a primary care physician. **MEASUREMENTS:** Interviews at baseline and at 6, 9, 12, 18, and 24 months examined medication use, clinical outcomes, and quality of life (Depression Rating Scale and depression subscale of the Hopkins Symptom Checklist-25 and Medical Outcomes Study SF-36 Health Survey). Medical costs were assessed using the health maintenance organization's accounting data. **RESULTS:** Patients assigned to fluoxetine therapy were significantly more likely to continue taking antidepressant but no more likely to continue any antidepressant therapy. The fluoxetine group did not differ significantly from either tricyclic drug group on any measure of depression severity or quality of life. For 24 months, antidepressant drug costs were approximately \$250 higher for patients assigned to fluoxetine therapy, but total costs were essentially identical. **CONCLUSIONS:** Initial selection of fluoxetine or a tricyclic antidepressant drug should lead to similar clinical outcomes, function, and overall costs. Differences in antidepressant prescription costs are blunted in the minority of tricyclic-treated patients who switch to use of more expensive medication. Restrictions on first-line use of fluoxetine in primary care will probably not reduce treatment costs.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

PMID: 10418538 [PubMed - indexed for MEDLINE]

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☐ 17: J Clin Psychiatry 1999;60 Suppl 7:19-26; discussion 27-8

Rel:

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### **Best clinical practice: guidelines for managing major depression in primary medical care.**

**Schulberg HC, Katon WJ, Simon GE, Rush AJ.**

Department of Psychiatry, University of Pittsburgh School of Medicine, PA, USA.

Practice guidelines such as those of the United States Public Health Service and the Institute of Medicine's Health Care Policy and Research have been instrumental in addressing the significant problem of how best to manage major depression in primary medical care. Since the publication of this set of guidelines in 1993, new findings from randomized controlled trials and extensive clinical experience permit us to reevaluate trends in treatment of major depression in primary medical care. This review suggests guidelines for achieving the best clinical practice given current knowledge.

## Publication Types:

- Review
- Review, Tutorial

PMID: 10326871 [PubMed - indexed for MEDLINE]

□ 18: J Fam Pract 1998 Dec;47(6):446-52

Reli

**Local Print Collection****Depression, health-related quality of life, and medical cost outcomes of primary care patients receiving recommended levels of antidepressant treatment.****Revicki DA, Simon GE, Chan K, Katon W, Heiligenstein J.**

Center for Health Outcomes Research, MEDTAP International, Bethesda, MD, USA.

**BACKGROUND:** We evaluated depression severity, health-related quality of life, and medical cost outcomes of primary care patients receiving recommended levels of antidepressant treatment. **METHODS:** We performed a retrospective analysis of clinical trial data from primary care clinics in a staff-model managed care organization. The trial included patients with Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R) criteria for major depression who were starting antidepressant treatment. The primary outcomes measures used were Hamilton Depression Rating Scale (HDRS), Hopkins Symptom Checklist depression subscale scores, the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) physical component summary scores, and the total outpatient and inpatient medical costs. **RESULTS:** Of 358 patients starting antidepressant treatment, 195 (54.5%) received recommended levels of antidepressant treatment. Mean HDRS score decreased from 14.1 to 8.8 in patients receiving less-than-recommended treatment and decreased from 13.8 to 8.9 in patients with minimum recommended treatment ( $P = .761$ ). No significant differences in improvement of HRQL outcomes due to treatment were observed between patients receiving recommended or less-than-recommended antidepressant therapy. Mean total medical costs over 6 months for patients receiving recommended levels of antidepressant treatment were \$1872 +/- 140 compared with \$2285 +/- 413 for patients taking less-than-recommended treatment ( $P = .032$ ). The total medical costs were attributable to significantly lower nonmental health-related inpatient costs in the recommended antidepressant treatment group (\$104 vs \$154,  $P = .004$ ). **CONCLUSIONS:** Patients receiving minimum recommended levels of antidepressant therapy for 3 months showed improvement in depression severity comparable with patients receiving less-than-recommended treatment. Patients receiving minimum recommended treatment had lower total costs and nonmental health-related inpatient costs. Antidepressant treatment in primary care patients may have a significant impact on the frequency of health care visits and on costs for medical conditions and impairments.

## Publication Types:

- Clinical Trial



- Multicenter Study
- Randomized Controlled Trial

PMID: 9866670 [PubMed - indexed for MEDLINE]

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☐ **19:** Arch Gen Psychiatry 1998 Dec;55(12):1121-7

Reli

**Local Print Collection**

**Treating major depression in primary care practice: an update of the Agency for Health Care Policy and Research Practice Guideline**

**Schulberg HC, Katon W, Simon GE, Rush AJ.**

Department of Psychiatry, University of Pittsburgh School of Medicine, PA, schulbergh@msx.upmc.edu

The Depression Guideline Panel of the Agency for Health Care Policy and Research published recommendations for treating major depression in primary care settings in 1993. These recommendations were often based on studies of tertiary care psychiatric patients. We reviewed randomized controlled trials in primary care settings published between 1992 and 1997. This evidence indicates that both antidepressant pharmacotherapy and time-limited depression-targeted psychotherapies are efficacious when transferred from psychiatric to primary care settings. In most cases, the choice between these treatments should be based on patient preference. Studies to date suggest that improving treatment of depression in primary care requires properly organized treatment programs, regular patient monitoring of treatment adherence, and a prominent role for the mental health educator, consultant, and clinician for the more severely ill. Future research should focus on how guidelines are best implemented in routine practice, since conventional strategies have little impact.

Publication Types:

- Review
- Review, Tutorial

PMID: 9862556 [PubMed - indexed for MEDLINE]

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☐ **20:** Psychosom Med 1998 Mar-Apr;60(2):143-9

Reli

**Treatment costs, cost offset, and cost-effectiveness of collaborative management of depression.**

**Von Korff M, Katon W, Bush T, Lin EH, Simon GE, Saunders K, Ludman E, Unutzer J.**

Center for Health Studies, Group Health Cooperative of Puget Sound, Seattle, WA, USA.

**OBJECTIVE:** The report estimates the treatment costs, cost-offset effects, an effectiveness of Collaborative Care of depressive illness in primary care. STI Treatment costs, cost-offset effects, and cost-effectiveness were assessed in t randomized, controlled trials. In the first randomized trail (N = 217), consulti psychiatrists provide enhanced management of pharmacotherapy and brief psychoeducational interventions to enhance adherence. In the second random 153). Collaborative Care was implemented through brief cognitive-behavior enhanced patient education. Consulting psychologist provided brief psychoth supplemented by educational materials and enhanced pharmacotherapy mana **RESULTS:** Collaborative Care increased the costs of treating depression larg the extra visits required to provide the interventions. There was a modest cos reduced use of specialty mental health services among Collaborative Care pa of ambulatory medical care services did not differ significantly between the i and control groups. Among patients with major depression there was a mode cost-effectiveness. The cost per patient successfully treated was lower for Co Care than for Usual Care patients. For patients with minor depression. Collat was more costly and not more cost-effective than Usual Care. **CONCLUSIO** Collaborative Care increased depression treatment costs and improved the co effectiveness of treatment for patients with major depression. A cost offset in mental health costs, but not medical care costs, was observed. Collaborative provide a means of increasing the value of treatment services for major depre

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

PMID: 9560861 [PubMed - indexed for MEDLINE]

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☐ **21:** Pharmacoeconomics 1998 Jan;13(1 Pt 1):61-70

Reli

## **Cost implications of initial antidepressant selection in primary c**

**Simon GE, Fishman P.**

Center for Health Studies, Group Health Cooperative of Puget Sound, Seattle USA. [simon.g@ghc.org](mailto:simon.g@ghc.org)

While fluoxetine is considerably more expensive than tricyclic antidepressant, some previous studies have suggested that general medical expenditures are lower for patients treated with fluoxetine. In this study, computerised pharmacy and medical records of a large health plan were used to examine overall treatment costs for primary-care patients beginning antidepressant treatment with fluoxetine or c imipramine or desipramine. Comparison was based on initial medication prescribed, regardless of subsequent switches or discontinuation. Patients treated with fluoxetine, older, with a higher burden of medical illness and higher overall health-service utilization at starting antidepressant treatment, compared with patients receiving the other choice of fluoxetine was associated with approximately \$US140 higher mean costs and approximately \$US300 higher mean costs for all other health service

costs). Alternative methods of accounting for baseline differences (age, medical comorbidity, prior costs) indicated that adjusted 'non-antidepressant' costs (to costs of antidepressant therapy) in the fluoxetine group were \$US75 to \$US3 in either of the TCA groups, but these differences were not statistically significant. Subgroup analyses suggested that the use of fluoxetine was associated with lower costs only among those incurring high costs in the pretreatment period. These results support earlier studies suggesting that the use of fluoxetine as a first-line antidepressant in primary care will increase antidepressant drug costs, but will not significantly increase treatment costs.

PMID: 10175986 [PubMed - indexed for MEDLINE]

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☐ **22:** J Psychosom Res 1997 Apr;42(4):333-44

Reli

 FULL-TEXT ARTICLE

### **Depression, use of medical services and cost-offset effects.**

**Simon GE, Katzelnick DJ.**

Center for Health Studies, Seattle, WA 98101-1448, USA.

This review considers evidence that depression is associated with increased utilization of medical services and that more intensive treatment of depression might be expected to reduce medical expenditures. Cross-sectional studies strongly support an association between depression and medical utilization, but cannot establish a causal relationship. Available longitudinal studies lack the sample size and duration of follow-up to examine how changes in depression influence utilization. Some quasi-experimental studies support a "cost-offset" effect due to mental health treatment. Experimental data directly address the specific impact of depression treatment on medical utilization. The available data identify the potential for large cost savings through treatment of depression but do not clearly establish that such savings can be realized. Definitive proof of a cost-offset due to depression treatment will require a new series of experimental studies adapted to assess economic outcomes.

Publication Types:

- Review
- Review, Tutorial

PMID: 9160273 [PubMed - indexed for MEDLINE]

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☐ **23:** JAMA 1996 Jun 26;275(24):1897-902

Reli

Comment in:

- ACP J Club. 1997 Jan-Feb;126(1):16
- [JAMA. 1996 Oct 23-30;276\(16\):1301-2; discussion 1302.](#)
- [JAMA. 1996 Oct 23-30;276\(16\):1301; discussion 1302.](#)

**Local Print Collection****Initial antidepressant choice in primary care. Effectiveness and fluoxetine vs tricyclic antidepressants.**

**Simon GE, VonKorff M, Heiligenstein JH, Revicki DA, Grothaus L, Kat Wagner EH.**

Center for Health Studies, Group Health Cooperative, Seattle, WA 98101-14

**OBJECTIVE:** To compare the clinical, functional, and economic outcomes of prescribing fluoxetine with outcomes of initially selecting imipramine or desipramine.  
**DESIGN:** Randomized controlled trial. **SETTING:** Primary care clinics of a staff-model health maintenance organization from 1992 through 1994. **PATIENTS:** A total of 536 adults beginning antidepressant treatment for depression. **INTERVENTIONS:** Random assignment of initial antidepressant prescription (desipramine, fluoxetine, or imipramine). Subsequent antidepressant treatment (doses, medication change, discontinuation, specialty referral) was managed by the primary care physician.  
**OUTCOME MEASURES:** Assessments after 1, 3, and 6 months examined clinical outcomes (Hamilton Depression Rating Scale and the depression subscale of Symptom Checklist) and quality-of-life outcomes (Medical Outcomes Study questionnaire). Medication use and health care costs were assessed using the health maintenance organization's computerized data. **RESULTS:** Patients assigned to receive fluoxetine reported fewer adverse effects, were more likely to continue the original medication, and were more likely to reach adequate doses than patients beginning treatment with a tricyclic drug. The fluoxetine group reported marginally better clinical outcomes at 1 month, but these differences were not statistically significant and disappeared at 3 and 6 month assessment. Quality-of-life outcomes in the 3 groups did not differ. Total health care costs over 6 months were approximately equal for the 3 groups, with higher inpatient costs in the fluoxetine group balanced by lower outpatient visit and inpatient costs. **CONCLUSIONS:** Clinical outcomes, quality-of-life outcomes, and overall treatment costs provide no clear guidance on initial selection of fluoxetine or tricyclic drugs. Physician and physicians' preferences are an appropriate basis for treatment selection.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

PMID: 8648870 [PubMed - indexed for MEDLINE]

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☐ **24:** Am J Psychiatry 1996 Mar;153(3):331-8

Reli

**Local Print Collection****Impact of visit copayments on outpatient mental health utilization by members of a health maintenance organization.**

**Simon GE, Grothaus L, Durham ML, VonKorff M, Pabiniak C.**

Center for Health Studies, Group Health Cooperative of Puget Sound, Seattle 1448, USA.

**OBJECTIVE:** The authors examined the impact of increasing cost sharing on outpatient mental health services. **METHOD:** A quasi-experimental design to study outpatient utilization by members of a health maintenance organization were subject to increasing copayments for mental health visits (state government and dependents). Their outpatient mental health utilization was compared with similar HMO members who were not subject to cost sharing (federal government employees and dependents). Analyses compared both likelihood of any service and number of visits per year among service users. **RESULTS:** Institution of \$20 copayments was associated with a 16% decrease in likelihood of service use and in visit rate among service users. A subsequent copayment increase to \$30/visit had no significant change in likelihood of use but was associated with a 9% decrease per year among those using services. The impact of the first copayment change on likelihood of using services did not vary according to level of clinical need (at prior service use and psychotropic drug use). **CONCLUSIONS:** In this staff-model, modest visit copayments significantly reduced initial access to mental health services but had a smaller effect on treatment intensity. Copayments restricted access regardless of clinical need. Designers of mental health benefits must consider the impact of cost sharing on those with the greatest need for treatment.

PMID: 8610819 [PubMed - indexed for MEDLINE]

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☐ **25:** Arch Gen Psychiatry 1995 Oct;52(10):850-6

Reli

Local Print Collection

### **Health care costs of primary care patients with recognized depression**

**Simon GE, VonKorff M, Barlow W.**

Center for Health Studies, Group Health Cooperative of Puget Sound, Seattle

**BACKGROUND:** While an extensive literature documents the influence of depression on general medical services utilization, estimates of the economic burden of depression have focused on the direct costs of depression treatment. Higher use of general medical services may contribute significantly to the true cost of depressive illness. **METHOD:** Computerized record systems of a large staff-model health maintenance organization (HMO) were used to identify consecutive primary care patients with visit diagnosis of depression (n = 6257) and a comparison sample of primary care patients without depression (n = 6257). The HMO accounting records were used to compare health care costs. **RESULTS:** Patients diagnosed as depressed had higher annual health care costs (\$4246 vs \$2371, P < .001) and higher costs for every category of care (general care, medical specialty, medical inpatient, pharmacy, laboratory). Similar cost differences were observed for each of the subgroups examined (patients treated with antidepressants vs those not treated with antidepressants, and those diagnosed at routine physical visits vs those diagnosed at specialty visits). Pharmacy records indicated greater chronic medical illness in the depression group, but large cost differences remained after adjustment (\$397 vs \$2371). Twofold cost differences persisted for at least 12 months after initiation of treatment.

**CONCLUSIONS:** Diagnosis of depression is associated with a generalized increase in use of health services that is only partially explained by comorbid medical conditions. In the primary care sector, this greater medical utilization exceeds direct treatment of depression. The persistence of utilization differences suggests that recognition and treatment of depression alone are not adequate to reduce utilization differences.

PMID: 7575105 [PubMed - indexed for MEDLINE]

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□ 26: Med Care 1995 Aug;33(8):783-95

Reli

Local Print Collection

### **A chronic disease score with empirically derived weights.**

**Clark DO, Von Korff M, Saunders K, Baluch WM, Simon GE.**

Indiana University Department of Medicine, Indianapolis, USA.

Different types of medication prescribed during a 6-month period for the treatment of chronic conditions were utilized in the refinement and validation of a chronic disease score. Prescription data, in addition to age and sex, were utilized to develop a chronic disease score based on empirically derived weights for each of three categories: total cost, outpatient cost, and primary care visits. The ability of the revised chronic disease score to predict health care utilization, costs, hospitalization, and mortality was compared to an earlier version of the chronic disease score (original) that was derived through judgments of disease severity. The predictive validity of the chronic disease score was compared to ambulatory care groups, which utilize outpatient diagnoses to form exclusive diagnostic categories. Models based on a concurrent 6-month period and a 6-month prospective period (ie, the 6-month period after the chronic disease score derivation period) were estimated using a random one-half sample of 250,000 managed-care enrollees aged 18 and older. The remaining one-half of the population was used as a validation sample. The revised chronic disease score improved estimation and prediction over the original chronic disease score. The increase in variance explained prospectively by the revised chronic disease score versus ambulatory care groups, conversely, was small. The revised chronic disease score was a better predictor of mortality than the ambulatory care groups. The combination of the chronic disease score and ambulatory care groups showed only marginally greater predictive power than either one alone. These results suggest that the revised chronic disease score and ambulatory care groups with empirically derived weights provided improved prediction of health care utilization and costs, as well as hospitalization and mortality, over age and sex alone. We recommend the revised chronic disease score total cost weights for general use as a severity measure because of its relative performance in predicting mortality compared to the outpatient cost and primary care visit weights.

PMID: 7637401 [PubMed - indexed for MEDLINE]

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Reli



□ 27: J Occup Med 1994 Jul;36(7):731-7

Comment in:

- [J Occup Environ Med. 1995 Dec;37\(12\):1323.](#)

Local Print Collection

**Multiple chemical sensitivity syndrome: a clinical perspective. II  
Evaluation, diagnostic testing, treatment, and social considerations**

**Sparks PJ, Daniell W, Black DW, Kipen HM, Altman LC, Simon GE, To**

Providence Medical Center, Seattle, Washington 98122.

Multiple chemical sensitivity syndrome (MCS) does not appear to fit established models of toxicology. Social, political, and economic forces are demanding that MCS be medically defined, even though scientific studies have failed as yet to identify pathogenic mechanisms for the condition or any objective diagnostic criteria. Consequently, the definition of MCS can only rely on a person's subjective symptoms of distress attributed to environmental exposures rather than currently measurable objective signs of disease. Nevertheless, patients labeled with MCS are clearly distressed and functionally disabled. Without reconciling the different theories of etiology or pathogenesis discussed in Part I of this report, and recognizing that the cause of the syndrome is multifactorial, strategies are proposed for clinical evaluation and management of MCS using a biopsychosocial model of illness. The social implications of MCS are also discussed.

Publication Types:

- Review
- Review, Tutorial

PMID: 7931737 [PubMed - indexed for MEDLINE]

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□ 28: Am J Psychiatry 1994 Jun;151(6):908-13

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Local Print Collection

**Predictors of outpatient mental health utilization by primary care patients in a health maintenance organization.**

**Simon GE, VonKorff M, Durham ML.**

Center for Health Studies, Group Health Cooperative of Puget Sound, Seattle

**OBJECTIVE:** The authors examined the volume and predictors of outpatient utilization among primary care patients in a large staff-model health maintenance organization (HMO). **METHOD:** Consecutive primary care patients (N = 1,800) screened by using the 12-item General Health Questionnaire, and a stratified sample (N = 373) completed the 28-item General Health Questionnaire and the International Diagnostic Interview. Telephone interviews and computerized

used to examine use of mental health services inside and outside the HMO over following 3 months. RESULTS: Over 3 months, 6.7% of the screened patient health services within the HMO. Utilization increased with higher General Health Questionnaire score (2.9% among those scoring 0, 22.3% among those scoring 1 and decreased with higher out-of-pocket cost for mental health visits (7.5% for no change, 3.3% for those paying \$30/visit). Among the interviewed subjects mental health services within the HMO (mean = 2.92 visits) and 8.9% used outside health services (mean = 8.86 visits). Use of outside services was more strongly related to sociodemographic factors, and use of inside services was more related to severity of psychological disorder. CONCLUSIONS: Among these subjects, use of mental health services was high and services purchased outside the HMO exceeded those inside the HMO. Increasing copayment levels progressively reduced demand without respect to illness. Attempts to control outpatient mental health costs must address equitable need.

PMID: 8185002 [PubMed - indexed for MEDLINE]

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