



What is the evidence on effectiveness of capacity building of primary health care professionals in the detection, management and outcome of depression?

Dec 2004

ABSTRACT

This is a Health Evidence Network (HEN) synthesis report on the evidence on effectiveness of capacity building of primary health care professionals in the detection, management and outcome of depression.

A substantial evidence base exists to support the effectiveness of collaborative care, case management and stepped care in improving patient adherence with treatment and improved clinical outcomes. Clinician education and guidelines, when offered by themselves, are largely ineffective strategies. A near uniform finding was that the improved outcomes of successful strategies are associated with increased healthcare costs.

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Gilbody S (2004). *What is the evidence on effectiveness of capacity building of primary health care professionals in the detection, management and outcome of depression?* Copenhagen, WHO Regional Office for Europe (Health Evidence Network report; <http://www.euro.who.int/Document/E85243.pdf>, accessed [day month year]).

Keywords

DEPRESSION – diagnosis – therapy
PRIMARY HEALTH CARE – organization and administration
HEALTH PERSONNEL - education
QUALITY OF HEALTH CARE
META-ANALYSIS
DECISION SUPPORT TECHNIQUES
EUROPE

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Summary

The issue

Depression is a common healthcare problem and is largely managed in primary care, with little or no specialist input from secondary care services. The quality of care is often low, with poor recognition of the condition, inadequate prescription, poor compliance with medication and poor provision and uptake of psychological interventions. Commonly advocated interventions on capacity building of primary health care professionals in the detection, management and outcome of depression include: clinician education, guidelines, collaborative care, case management and stepped care.

Findings

A substantial evidence base exists to support the effectiveness of collaborative care, case management and stepped care in improving patient adherence with treatment and improved clinical outcomes. Clinician education and guidelines, when offered by themselves, are largely ineffective strategies. A near uniform finding was that the improved outcomes of successful strategies are associated with increased healthcare costs.

Policy considerations

There is a substantial opportunity to improve the quality and outcome of primary care for depression. Improved quality of care will require a substantial investment in primary care services, and a reconfiguration of the roles and relationships between primary and secondary care. Some interventions, such as nurse case management, might be relatively low cost and be easily implemented within many healthcare settings. Improved outcome will require a greater allocation of resources to primary mental health care than is currently the case in many health care systems.

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Introduction

Depression is soon to become the second leading cause of disability worldwide (1), affecting between 5% and 10% of the population, and it is the third most common reason for consultation in primary care (2). Patients with depression are largely managed within a primary care environment, but the identification, attribution to depression and consequently the actual treatment and follow-up fall short of the best practice (3-5). For example, depression is often missed among primary care patients presenting with somatic rather than emotional problems. When depression is recognized, patients are often prescribed anti-depressants inappropriately or in inadequate dosages. Discontinuation rates for anti-depressants are high and patient follow up is poor, with missed opportunities for evidence-based treatment. Additionally, the provision and uptake of psychological and social interventions is often poor. Each of these factors compromises patient outcome. Improving the management of depression in primary care is central to the WHO strategy for mental health (6).

The costs associated with depression in primary care arise in part due to increased consultation and resource use directly associated to depression. This is often compounded when depression goes unrecognized and patients present with somatic rather than, or in addition to, psychological symptoms (7). Patients with depression also commonly suffer comorbid physical disorders, and incompletely or poorly managed depression is associated with impaired outcome of physical disorders and increased resource utilization (8), including referrals to secondary care (9). The economic burden of depression is also felt within society at large, through the burden that falls on carers and dependants, and through lost productivity, reduced quality and duration of life and daily function. The annual direct and indirect costs of depression have recently been estimated to be \$83 billion in the United States (10) and £9 billion in the United Kingdom (11); indirect costs are 20 times higher than direct treatment costs.

A number of organizational and educational strategies targeted at healthcare professionals have been proposed, in order to improve the recognition and management of depression in primary care, including:

- educational strategies targeting primary care workers (3)
- clinical practice guidelines and strategies to implement them (12)
- case management, with an enhanced role for non-medical specialists, such as practice nurses (13)
- consultation liaison with an educative role for practitioners working more closely with non-specialist clinicians (14)
- collaborative and stepped care with improved and integrated working relationships between primary care and secondary services (13).

The purpose of this evidence synthesis is to provide an overview of the clinical and cost effectiveness of these strategies, together with an appreciation of the implications for policy and clinical practice.

Sources for this review

Several high quality sources of evidence-based information were used. Evidence relating to the clinical and cost effectiveness of a broad range of strategies designed to enhance organization and delivery of primary care for depression was sought. The initial source was high quality systematic reviews of literature supplemented by an overview of new primary research. Evidence from randomized controlled trials, controlled clinical trials and interrupted time series was considered, in line with guidance for the Cochrane Effective Practice and Organization of Care (EPOC) group (15). Primacy was given to evidence from randomized trials.

The following evidence sources and electronic databases were searched from inception to September 2004 for both systematic reviews and new primary research: Medline, Embase, Cinahl, PsycLIT, EconLIT, Cochrane Library, NHS Economic Evaluations Database (NHS EED), and the Database of Reviews of Effectiveness (DARE). Search strategies included terms relating to depression, primary care and quality improvement strategies, developed from strategies of the Cochrane EPOC group (15) and the NHS Centre for Reviews and Dissemination (16,17).

Findings from research and other evidence

There is increasing recognition that depression is a chronic disease (13) and that population-based strategies, targeted at the large portion of people with depression who are solely managed in primary care, are most efficient in improving care (18). These strategies are in line with a key policy recommendation of the World Health Organization that the treatment for common mental health problems should be based in primary care (6).

The evidence presented below is largely drawn from two high quality systematic reviews on the primary care management of depression (19, 20), supplemented by additional searches to identify more recently published research. A substantial body of research into the optimum organization and delivery of primary care for depression exists, much of it conducted in the United States, and the limitations of extrapolating these results should be borne in mind. Evidence relating to several approaches to improving the organization and delivery of primary care for depression was found. This is outlined below, and a summary of definitions relating to these approaches is given in Annex 1.

Education and training for primary care health professionals

Several large studies of educational strategies to improve depression management have been conducted. The first and best known of these studies was conducted on the Swedish island of Gotland in the mid-1980s. Management of depression was known to be poor, and the population suffered an unusually high suicide rate (21, 22). An educational intervention directed at all primary care physicians on the island was evaluated using an interrupted time series analysis over a five-year period. The Gotland study demonstrated improvements in the pharmacological management of depression and a brief reduction in the suicide rate compared to mainland Sweden. However, this study used a relatively weak epidemiological design – the Interrupted Time Series (ITS) (23); its results have never been replicated, and must be considered alongside a large number of methodologically more robust evaluations of educational interventions.

Clinician educational strategies using a broad range of techniques have been proposed to improve the recognition and management of depression, including: the dissemination of written guidelines (24), one-to-one educational strategies (academic detailing) (25), continuous quality improvement (CQI) (26,27), group based teaching (28), the use of local opinion leaders, and more complex and intensive educational and skills-based strategies (29). These have been shown to be partially effective in improving knowledge and attitudes of clinicians in depression management (26,28), but where patient outcomes have been studied, little or no effect on the actual recognition or outcome of depression has been demonstrated (30–33). For example, a large, well-designed cluster-randomized study conducted

in the United Kingdom devised a multifaceted educational strategy targeted at a range of primary care health professionals (31), including videos, written materials, small-group teaching sessions and role-playing, and delivered by a multidisciplinary team. This strategy met perceived educational needs and was well received, but had no impact on either recognition rates for depression.

The broad conclusion that can be drawn from the research literature is that educational interventions, by themselves, have little impact in improving the management of depression in primary care.

Collaborative care

Collaborative care builds upon the notion of depression as a chronic disease (34), and thus seeks to enhance and structure its care (35,36) via such strategies as the introduction of supportive workers such as case managers; active follow up; ready access to specialist support through joint consultation and follow up; decision support through practice guidelines, treatment algorithms and computerized pharmacy records; patient education and collaboration.

Collaborative care (13) and related complex quality-improvement initiatives (37,38) have been subjected to the most evaluation, with over 12 randomized studies, mainly in United States primary care environments. Several studies have used various combinations and variations on the basic structure of collaborative care.

Two major studies by Katon, et al. (39,40) used a population-based approach to improve the delivery of care for those with known depression (18). Intensive care – incorporating patient education and shared care between the primary care physician, psychiatrist and psychologist (using a cognitive-behavioural approach) – was associated with improved treatment adherence and patient recovery rates and resulted in lower overall cost-per-patient for successful treatment (between \$940-\$3741 per case). This "cost offset" effect was seen only for those with major depression. Sustained improvement depressive disorders management was not seen beyond the period of enhanced organizational care (41), suggesting that clinician education alone was not sufficient to maintain change.

A supplementary intervention, targeted at those at high risk of recurrence of depression following acute phase treatment showed improved depression outcomes at 12 months, and concordance with medication (42). The incremental outpatient cost-effectiveness ratio was \$14 per depression-free day (43). A more recent study by Unutzer et al. (44) showed that collaborative care can be extended to late life depression, where patient education, case management and problem-solving therapy were associated with improved depression at 12 months and enhanced concordance with medication.

While the vast majority of collaborative care concern American managed-care environments, there is emerging evidence that the effectiveness of these collaborative strategies can be maintained in healthcare systems of other countries. For example, Araya et al. (45) conducted a trial of collaborative care in urban Santiago, Chile using non-medical support workers who coordinated care, offered group education and monitored drug compliance and treatment progress. This low-cost intervention was acceptable to patients and was associated with major improvements in outcome at six months.

Quality improvement

Two large randomized studies examined a complex package of care described as "quality improvement" (46–50), aiming to increase recognition (through screening) and management of depression. This complex organizational and educational intervention involved patient screening by questionnaires and feedback, clinician education, the use of opinion leaders, patient-specific reminders, nurse case management (see below) and enhanced integration of specialist care. Quality improvement was targeted at either improved concordance with medication or improved uptake of cognitive behavioural therapy. Both interventions were effective in improving both concordance and depression outcomes over 6 and 12 months. The benefit for depression outcomes had disappeared at the 24-month follow up, although improved concordance and global outcome persisted. The

incremental cost of providing either of these interventions was \$419–485 per patient over 2 years, and cost per QALY (Quality Adjusted Life Years) estimates were \$36 434 for quality improvement medication and \$21 460 for quality improvement therapy. Evidence has recently emerged on the longer term impact of these quality improvement strategies over five years (51).

Case management

Several studies with positive results incorporated case management – most commonly by primary care nurses – to improve the delivery of care. In some studies, nurse involvement was of low intensity, and involved little more than brief patient medication counselling (52) or telephone support (53–55). In others, nurse case management was a core ingredient of an effective complex strategy (38,47,56,57). For example, in the QuEST study non-psychiatrically trained practice nurses were given training in depression management, and they provided a level of ongoing support, monitored therapy, outpatient attendance and treatment response according to well established algorithms (57,58). When patients failed to improve, they were encouraged to seek help from their physician or were referred on to specialist care. Nurse case management was delivered solely over the telephone ("Nurse Telehealth care") in one study (53), which showed improved outcomes for depression over six months, but did not alter concordance with medication. The intervention involved weekly 10-minute phone calls. It is likely that the cost-per-patient would be low for this intervention, although formal economic evaluation was not presented.

Several positive studies included an element of follow up by non-clinicians (nurses, practice counsellors or graduate psychologists) to ensure that patients started on anti-depressants were taking their medication and could discuss emerging difficulties (38,42,47,53,55,57,59). In three studies this was the main focus of the intervention (52,54,55,59). One study demonstrated that two 20-minute follow up sessions with a practice nurse, primarily to discuss medication, could substantially enhance concordance, and depression outcome was improved in a subset of patients with major depression (52). In another study, brief medication counselling (follow up delivered by counsellors following eight hours of initial training and 15–30 minutes of clinical supervision per week) resulted in improved clinical response, and enhanced concordance (59). The direct incremental costs of this intervention were \$83 per patient. In the most recent study, telephone case management and follow-up was delivered by nurses with some mental health experience and with supervision from a psychiatrist (55). Telephone case managers monitored treatment, treatment response and supported self-management practices such as exercise or engaging in social activities. Again this intervention substantially enhanced clinical response at three and six months and was associated with enhanced satisfaction with care (90% v 75% rated care as good or excellent at six months).

Guidelines

Guidelines are increasingly advocated as an educational and quality improvement strategy (12), and along with implementation strategies were used as a method of decision support for clinicians in a large number of studies. The most commonly used guideline was that developed by the United States Agency for Healthcare Research and Quality, which is explicitly linked to evidence in its recommendations (60,61). Guideline implementation strategies were varied and often complex, including active dissemination and clinician education measures such as academic detailing, peer review and the use of opinion leaders. Concordance with guidelines – especially dosage and duration of anti-depressant therapy – was used as the criterion of the quality of depression care (26,27,38–41,47,54,56,57,59,62). Guideline implementation strategies commonly included several organizational elements. However, those aimed at the overall recognition and management of depression were only successful when educational interventions were accompanied by complex organizational interventions – such as nurse case management (54,57), collaborative care (63), a depression management programme (38) or intensive quality improvement programme (48).

Stepped care

Enhanced care packages for depression, such as case management and collaborative care, are generally effective in improving depression outcomes. However, offering enhanced care for all patients with depression and at all levels of severity may not be a feasible or efficient use of limited resources when there are insufficient personnel to deliver intensive forms of psychosocial intervention. Stepped care provides a framework for using limited resources to the greatest effect (64). Professional care is stepped in intensity – that is, it starts with limited professional input and systematic monitoring and is then augmented for patients who do not achieve an acceptable outcome. Initial and subsequent treatments are selected according to a stepped algorithm in light of a patient's progress. The principle of increasing intensity of professional input for those who do not respond to initial management is familiar in primary care. However, organized stepped care requires the systematic monitoring of progress and higher levels of coordination between specialist care, care management, and primary care than generally exist. Patients with the highest level of need and severity of illness receive the most intensive forms of intervention, such as the collaborative care and case management outlined above. The primary care team, a specialist consultant (as needed), and a care manager (as needed) work together to provide the level of professional support necessary for a favourable outcome. Stepped care is individualized according to each patient's preferences and progress (36).

Stepped care has been evaluated in two large randomized trials (56,65), each showing improved outcomes in clinical response over six months (56).

Relapse prevention for depression

In addition to focussing on the enhanced acute-phase treatment of depression, quality improvement strategies have also been used to prevent relapse among those with successfully treated depression. This approach usually involves some form of education by case managers in order to enhance self-management. Case managers focus on the importance of maintenance treatment and the identification of psychosocial stressors, and provide regular telephone follow-up and monitor computerized pharmacy records. This approach has been shown to improve medication concordance and the number of depression free days over a 12-month period in a randomized trial (42-43).

Gaps and conflicts in the evidence

The major area of conflicting evidence is educational strategies targeted at primary care physicians. Educational strategies are perhaps the most commonly used approach in improving the quality of care in many healthcare systems (66, for example). It is often received wisdom that these strategies are effective, and the evidence base to support this approach has come from the series of studies that were conducted in conjunction with the Gotland primary care educational intervention (67). However, more recent evidence, using more robust epidemiological designs (randomized controlled trials) has shown that educational strategies are largely ineffective by themselves in improving the management and outcome of depression. Educational strategies, including the dissemination of guidelines, only become effective when they are coupled with organizational supports and re-engineering of healthcare processes through the use of case managers or collaborative care (35,68). On the basis of the current evidence, the conclusion must be that educational strategies, while easy to implement, are largely ineffective and cost-ineffective.

One approach that has been advocated in addition to collaborative care or the use of enhanced care is the consultation liaison in primary care. Here, the skills and knowledge of general practitioners are enhanced through the use of clinical specialists working in a primary care setting, offering advice and one-time review of complex patients, while the clinical responsibility remains with the primary care physician (69). This has the potential of being an effective and efficient mode of managing common mental health problems in primary care, with the potential for longer-lasting benefit as the skill levels

of primary care physicians increases through this strategy. This approach, in contrast to collaborative care, has not been well evaluated (64).

Cost-effectiveness of enhanced care for depression

Decision-makers increasingly seek information on clinical effectiveness and costs, in order to make optimal decisions about the use of limited resources. Studies of mental health interventions have often sought evidence of cost offset, where interventions might result in reduced costs to health care systems and society, while providing at least equal benefit. Where these conditions are met, decisions about adoption of interventions are more straightforward. However, where depression care is more costly *and* more effective, the issue is one of allocative efficiency, which requires an additional judgement about whether the additional gains are worth the extra cost.

In order to examine the cost effectiveness of enhanced primary care for depression, we sought all full economic evaluations (those that combine cost and consequences in the form of cost-benefit, cost-effectiveness, or cost-utility analyses) (70,71). Eleven full economic evaluations based upon randomized designs were identified, providing clinical and cost effectiveness estimates based on 4453 depressive patients (31,33,43,50,59,72–76). The majority were economic evaluations of enhanced care models based upon collaborative care or chronic disease models in the American health care system (43,50,59,72–76). Two British studies evaluated the clinical and cost effectiveness of a multidisciplinary primary care educational package to implement depression management guidelines (31–33). All of the studies examined clinical and cost effectiveness using cost data contemporaneously collected for a prospective randomized trial. None of the economic evaluations used a decision-modelling approach to establish cost effectiveness through the secondary synthesis of clinical and cost data (70). The majority of economic evaluations were cost-effectiveness analyses, with two cost-utility analyses (50,76).

The majority of studies examined cost and consequence from the perspective of the healthcare system or third party payer. Costs generally included all drug, depression and non-depression related primary care costs, together with the costs of specialist referrals. Several studies considered outpatient depression treatment costs alone, before broadening the perspective of the evaluation to include first all outpatient treatment costs and then all health service costs (74, for example). Some studies broadened the perspective of the economic evaluation, by studying patient and carer expenses and lost earnings through time in treatment (50,76). No studies considered lost earnings of patients as a consequence of illness and wider non-health-care costs, such as social security benefits and lost earnings of carers. The period of follow-up and the time horizon of the economic evaluation ranged from 6 to 24 months, and in no instance was discounting of costs over time used.

Nine of the eleven demonstrated improved clinical outcomes for depression management, and all demonstrated increased costs associated with caring for depression. Enhanced care programmes such as collaborative care, case management and stepped care each attracted increased treatment costs associated with delivering the intervention, increased primary care visits, increased use of anti-depressant medication, and access to secondary care. When considering primary care depression treatment costs alone, estimates ranged from \$13 to \$24 per depression-free day (59, 43). When the perspective of the evaluation was broadened, there was some suggestion that increased costs associated with the intervention might be partially offset through reduced use of other services, making the overall cost per depression-day appear less expensive, although this was not a consistent finding. In none of the studies was any cost-offset through reduced healthcare utilization of an extent and magnitude to make the overall programmes cost-saving and dominant (improved outcome at an overall net cost saving).

The only studies to examine the cost effectiveness of a purely educational approach were based upon a well-designed and implemented package and a well-designed clinical evaluation (31,33). Neither

showed any clinical impact on the improved management and outcome of depression, and costs associated with this intervention make clinician education a clearly cost-ineffective approach. One study differentiated the impacts of collaborative care on minor and major depressions (72). An incremental cost-effectiveness ratio of \$1592 per successfully treated case was found for major depression, while minor depression was associated with both increased cost and worse outcome – making the intervention cost- ineffective for minor depression.

Cost estimates ranged from \$15 463 per QALY (Quality Adjusted Life Years) for a nurse-delivered case-management approach (76) to \$36 434 per QALY for a complex quality-improvement intervention to enhanced medication management (50). In a series of cost-effectiveness ratio acceptability estimates using commonly cited thresholds, there was a 0.65 probability that the cost effectiveness of the intervention was less than \$20,000 per QALY, and a 91% probability that it was less than \$50 000 per QALY (76). Both cost-effectiveness thresholds were set arbitrarily, and below levels at which healthcare systems generally make positive funding decisions – regarding these health gains as sufficient for a given level of monetary investment (77).

Potential social implications

The major finding of this evidence synthesis is that there is a substantial opportunity to improve the quality of depression care. Given the major impact of depression on the quality of life and social functioning (1), such interventions can potentially contribute to generally enhanced social and economic well-being (10,11). The longer-term impact of enhanced programmes for depression and their impact on the quality of life are beginning to be ascertained (51). Economic studies have largely confined themselves to the impact of depression programmes from the limited perspective of health care providers, while the impact from a societal perspective has not been comprehensively addressed.

Aside from clinical and cost effectiveness, other dimensions of health care quality include access, efficiency, acceptability and willingness-to-pay. Focussing efforts on primary care depression management fits with global policy initiatives (6). Several studies show patients prefer to be treated in primary care and are satisfied with it (37,39,59). Approaches such as stepped care and case management have the potential to enhance access to care and to improve the efficiency of services, although this has not been comprehensively evaluated (64).

Many health care systems include relatively little provision for mental health, with poorly developed secondary care services and fragmented care within existing primary care services (6). Approaches that use low-intensity case management can be effective in low-income countries (45).

Discussion

This review begins with the explicit recognition that the vast majority of patients with depression are managed within a primary care setting, with little or no specialist input from secondary care services. Prioritizing the primary care management of depression is in line with broad policy goals, such as those laid down by the World Health Organization (6). The large body of evidence from randomized control studies in the area of enhanced primary care for depression is of substantial value to clinicians and decision-makers charged with improving the quality of care. The major limitation of this research, especially relating to collaborative care, is that it has been conducted in managed-care systems in the United States, thus raising questions about the degree to which findings can be extended to different organizational and funding systems.

Many proposed interventions are complex and involve many separate elements, such as screening, use of computerized decision-support systems, employment of additional staff and a greater degree of input from secondary care. Implementation of such models may not be possible in many health care

systems, and it remains important to identify which elements of enhanced care are responsible for the identified improvements in clinical outcomes and could be transferred to other systems. It is noteworthy that many low-intensity studies, with interventions delivered over the telephone by non-specialists are of low cost and show improved outcomes. The crucial component seems to be case management, and this should be the aspect of care most readily implemented (35). Several ongoing studies in the United Kingdom and other countries seek to replicate and adapt American collaborative care studies. Of note is the demonstration that the active components of collaborative care can be adapted and implemented in less developed health care systems (45).

Strength of the evidence

In contrast to many other areas of mental health practice and policy, the quantity and strength of evidence that is available to decision makers is high. Robust evidence from over 40 large-scale randomized trials, and 11 cost-effectiveness studies conducted alongside randomized trials is available in the published literature, representing the highest and least biased form of evidence (70,78). This allows some certainty in deciding what may potentially be clinically and cost effective and what is ineffective.

Conclusions

Research into improving the quality of primary care for depression has been relatively neglected until recently, and has tended to focus on the development of more specific and effective drugs and psychotherapies. However, a body of evidence suggests that the quality of primary care can be enhanced through better integration of services and encouragement of patient self-management and concordance with evidence-based treatments. Approaches such as collaborative care, stepped care and case management offer improved outcomes. Some easily implemented and commonly used strategies, such as clinician education, seem to have little or no impact on the care and outcome for depression. On the basis of the available research evidence, these approaches should not be used alone.

Enhanced care for depression incurs increased health care costs. Therefore, in deciding whether to adopt these approaches, decision-makers will have to judge whether the expected benefits can be justified by the required investments. Depression is associated with profound impairments in the quality of life and daily function, and the health benefits that might be expected are comparable to many interventions already funded by health care systems. These decisions can be made on the basis of a large and robust clinical and economic evidence-base.

Annex 1: Organizational and educational approaches to improving the quality of care

Practice guidelines	Guidelines have been defined as "systematically developed statements to assist practitioner decisions about appropriate healthcare for specific clinical circumstances" (79). The most commonly used guideline was that developed by the United States Agency for Healthcare Research and Quality (80). Guidelines are often accompanied by a range of interventions to implement them, including educational strategies and those organizational interventions outlined below.
Case management	Case management involves an enhanced role for non-medical specialists, such as practice nurses, who can coordinate care, provide psychosocial support and patient education to aid the optimal management of depression in a non-specialist setting (13).
Collaborative care	Collaborative care involves the re-engineering of care to a greater level of collaboration between the primary care physician, the patient and the specialist, by introducing support workers such as case managers; actively following up treatment; providing ready access to specialist support through joint consultation and follow up; enabling decision support through practice guidelines, treatment algorithms and computerized pharmacy records; patient education and collaboration (36).
Stepped care	Stepped care involves offering different intensity of care according to disease severity and response to treatment. The least restrictive intervention is offered in the first instance, before "stepping up" to a more intensive interventions if patients fail to (56). It offers a method of improving access and maximizing the efficiency with which interventions are given when health care resources are limited. In the case of depression, self-help might be offered before case management and drug treatment, prior to offering structured cognitive behaviour therapy.

References

1. Murray CJ, Lopez AD. *The global burden of disease: a comprehensive assessment of mortality and disability from disease, injuries and risk factors in 1990*. Boston, Harvard School of Public Health on behalf of the World Bank, 1996.
2. Singleton N, et al. *Office of National Statistics: Psychiatric Morbidity Among Adults Living in Private Households, 2000*. London, Her Majesty's Stationery Office, 2001.
3. World Health Organization. *ATLAS - Mental Health Resources in the World 2001*. Geneva, World Health Organization, 2001.
4. Simon G, Von Korff M. Recognition and management of depression in primary care. *Archives of Family Medicine*, 1995, 4:99–105.
5. Kessler D, et al. Cross sectional study of symptom attribution and recognition of depression and anxiety in primary care. *BMJ*, 1999, 318:436–440.
6. World Health Organization. *World Health Report 2001: Mental health: New understanding, new hope*. Geneva, 2001.
7. Kirmayer LJ, et al. Somatization and the recognition of depression and anxiety in primary care. *American Journal of Psychiatry*, 1993, 734–741.
8. Katon W, Ciechanowski P. Impact of major depression on chronic medical illness. *Journal of Psychosomatic Research*, 2002, 53:859–863.
9. Simon GE, et al. Recovery from depression, work productivity, and health care costs among primary care patients. *General Hospital Psychiatry*, 2000, 22:153–162.
10. Greenberg PE, et al. The economic burden of depression in the United States: How did it change between 1990 and 2000? *Journal of Clinical Psychiatry*, 2003, 64:1465–1475.
11. Thomas C, Morris S. Cost of depression among adults in England in 2000. *British Journal of Psychiatry*, 2003, 183:514–519.
12. Cabana MD, Rushton JL, Rush AJ. Implementing practice guidelines for depression: applying a new framework to an old problem. *General Hospital Psychiatry*, 2002, 24:35–42.
13. Katon W, et al. Rethinking practitioner roles in chronic illness: the specialist primary care physician and the practice nurse. *General Hospital Psychiatry*, 2001, 23:138–144.
14. Bower P, Gask L. The changing nature of consultation–liaison in primary care: bridging the gap between research and practice. *General Hospital Psychiatry*, 2002, 24:63–70.
15. Bero L, et al. The Cochrane Effective Practice and Organization of Care Group (EPOC) Module. *The Cochrane Library*, Issue 4. Oxford, Update Software, 1998.
16. NHS Centre for Reviews and Dissemination. *Making cost effectiveness information available: the NHS Economic Evaluation Database project (CRD Report 6)*, second edition. University of York, 2001.
17. NHS Centre for Reviews and Dissemination. *Undertaking Systematic Reviews of Research on Effectiveness (CRD Report 4)*, second edition. University of York, 2001.
18. Katon W, Von Korff M, Lin E, et al. Population-based care of depression: effective disease management strategies to decrease prevalence. *General Hospital Psychiatry*, 1997, 19:169–178.
19. Badamgarav E, Weingarten S, Henning J. Effectiveness of disease management programs in depression: a systematic review. *American Journal of Psychiatry*, 2003, 160:2080–2090.
20. Gilbody S, et al. Educational and organizational interventions to improve the management of depression in primary care: a systematic review. *JAMA, Journal of the American Medical Association*, 2003, 289:3145–3151.
21. Rutz W, von Knorring L, Walinder J. Frequency of suicide on Gotland after systematic postgraduate education for general practitioners. *Acta Psychiatrica Scandinavica*, 1989, 80:151–154.
22. Rutz W, von Knorring L, Walinder J. Long-term effects of an educational program for general practitioners given by the Swedish Committee for the Prevention and Treatment of Depression. *Acta Psychiatrica Scandinavica*, 1992, 85:83–88.
23. Cook TD, Campbell DT. *Quasi-experimentation: Design and Analysis Issues for Field Settings*. Boston, Houghton Mifflin, 1979.

24. Cornwall PL, Scott J. Which clinical practice guidelines for depression? An overview for busy practitioners. *British Journal of General Practice*, 2000, 50(460):908–911.
25. Freemantle N, et al. A randomized controlled trial of the effect of educational outreach by community pharmacists on prescribing in UK general practice. *British Journal of General Practice*, 2002, 52:290–295.
26. Brown JB, et al. Controlled trials of CQI and academic detailing to implement a clinical practice guideline for depression. *Joint Commission Journal on Quality Improvement*, 2000, 26:39–54.
27. Goldberg HI, et al. A randomized controlled trial of CQI teams and academic detailing: Can they alter compliance with guidelines? *Joint Commission Journal On Quality Improvement*, 1998, 24(3):130–142.
28. Andersen SM, Harthorn BH. Changing the psychiatric knowledge of primary care physicians: the effects of a brief intervention on clinical diagnosis and treatment. *General Hospital Psychiatry*, 1990, 12:177–190.
29. Gask L. Small group interactive techniques utilizing video feedback. *International Journal of Psychiatry and Medicine*, 1998, 28:97–113.
30. Worrall G, et al. Effectiveness of an educational strategy to improve family physicians' detection and management of depression. *Canadian Medical Association Journal*, 1999, 161:37–40.
31. Thompson C, et al. Effects of clinical-practice guidelines and practice-based education on detection and outcome of depression in primary care: Hampshire Depression Project randomized controlled trial. *The Lancet*, 2000, 355:185–191.
32. Lin EH, et al. Does physician education on depression management improve treatment in primary care? *Journal of General Internal Medicine*, 2001, 16:614–619.
33. Gask L, et al. A pragmatic cluster randomized controlled trial of an educational intervention for GPs in the assessment and management of depression. *Psychological Medicine*, 2004, 34:63–72.
34. Wagner EH, Austin BT, Von Korff M. Organizing care for patients with chronic illness. *Milbank Quarterly*, 1996, 74:511–544.
35. Von Korff M, Goldberg D. Improving outcomes of depression: the whole process of care needs to be enhanced. *BMJ*, 2001, 323:948–949.
36. Von Korff M, Glasgow RE, Sharpe M. ABC of psychological medicine: Organizing care for chronic illness. *BMJ*, 2002, 325:92–94.
37. Wells KB. The design of Partners in Care: evaluating the cost effectiveness of improving care for depression in primary care. *Social Psychiatry and Psychiatric Epidemiology*, 1999, 34:20–29.
38. Katzelnick DJ, et al. Randomized trial of a depression management program in high utilizers of medical care. *Archives of Family Medicine*, 2000, 9:345–351.
39. Katon W, et al. A multifaceted intervention to improve treatment of depression in primary care. *Archives of General Psychiatry*, 1996, 53(10):924–932.
40. Katon W, et al. Collaborative management to achieve treatment guidelines. Impact on depression in primary care. *JAMA, Journal of the American Medical Association*, 1995, 273(13):1026–1031.
41. Lin EH, et al. Achieving guidelines for the treatment of depression in primary care: Is physician education enough? *Medical Care*, 1997, 35:831–842.
42. Katon W, et al. A randomized trial of relapse prevention of depression in primary care. *Archives of General Psychiatry*, 2001, 58:241–247.
43. Simon GE, et al. Cost-effectiveness of a program to prevent depression relapse in primary care. *Medical Care*, 2002, 40:941–950.
44. Unutzer J, et al. Collaborative care management of late-life depression in the primary care setting: a randomized controlled trial. *JAMA, Journal of the American Medical Association*, 2002, 288:2836–2845.
45. Araya R, et al. Treating depression in primary care in low income women in Santiago, Chile: a randomized controlled trial. *The Lancet*, 2003, 361:995–1010.

46. Rubenstein LV, et al. Evidence-based care for depression in managed primary care practices. *Health Affairs* (Millwood), 1999, 18:89–105.
47. Wells KA, et al. Impact of disseminating quality improvement programmes for depression in managed primary care: a randomized controlled trial. *JAMA, Journal of the American Medical Association*, 2000;283:212-220.
48. Sherbourne CD, et al. Long-term effectiveness of disseminating quality improvement for depression in primary care. *Archives of General Psychiatry*, 2001, 58:696–703.
49. Unutzer J, et al. Two-year effects of quality improvement programs on medication management for depression. *Archives of General Psychiatry*, 2001, 58:935–942.
50. Schoenbaum M, et al. Cost-effectiveness of practice-initiated quality improvement for depression: results of a randomized controlled trial. *JAMA, Journal of the American Medical Association*, 2001, 286:1325–1330.
51. Wells K, et al. Five-year impact of quality improvement for depression: results of a group-level randomized controlled trial. *Archives of General Psychiatry*, 2004, 61:378–386.
52. Peveler R, et al. Effect of antidepressant drug counselling and information leaflets on adherence to drug treatment in primary care: randomized controlled trial. *BMJ*, 1999, 319:612–615.
53. Hunkeler EM, et al. Efficacy of nurse telehealth care and peer support in augmenting treatment of depression in primary care. *Archives of Family Medicine*, 2000, 9:700–708.
54. Datto CJ, et al. The pilot study of a telephone disease management program for depression. *General Hospital Psychiatry*, 2003, 25:169–177.
55. Dietrich AJ, et al. Re-engineering systems for the treatment of depression in primary care: cluster randomized controlled trial. *BMJ*, 2004, 329:602–609.
56. Katon W, et al. Stepped collaborative care for primary care patients with persistent symptoms of depression: a randomized trial. *Archives of General Psychiatry*, 1999, 56:1109–1115.
57. Rost K, et al. Improving depression outcomes in community primary care practice: a randomized trial of the QuEST intervention. *Journal of General Internal Medicine*, 2001, 16:143–149.
58. Rost K, et al. Designing and implementing a primary care intervention trial to improve the quality and outcome of care for major depression. *General Hospital Psychiatry*, 2000, 22:66–77.
59. Simon GE, et al. Randomized trial of monitoring, feedback, and management of care by telephone to improve treatment of depression in primary care. *BMJ*, 2000, 320:550–554.
60. Agency for Health Care Policy Research. *Depression in primary care*. Washington: United States Department of Health and Human Services, 1993.
61. AHCPR Depression Guideline Panel. *Depression in primary care: detection, diagnosis, and treatment*. Technical report, Number 5. Rockville, MD: United States Department of Health and Human Services, Public Health Service, 2000.
62. Rollman BL, et al. The electronic medical record. *Archives of Internal Medicine*, 2001, 161:189–197.
63. Lin EH, et al. Can depression treatment in primary care reduce disability? A stepped care approach. *Archives of Family Medicine*, 2000, 9:1052–1058.
64. Gilbody SM, Bower P. Common mental health disorders in primary care - access, effectiveness and choice. In: Knapp M DM, Mossialos E, Thornicroft G, eds. *Mental Health Policy and Practice Across Europe*. Buckingham: Open University Press, (in press).
65. Hedrick SC, et al. Effectiveness of collaborative care depression treatment in Veterans' Affairs primary care. *Journal of General Internal Medicine*, 2003,18:9–16.
66. Paykel ES, Priest RG. Recognition and management of depression in general practice: consensus statement. *BMJ*, 1992, 305:1198–1202.
67. Rutz W, et al. An educational program on depressive disorders for GPs on Gotland: background and evaluation. *Acta Psychiatrica Scandinavica*, 1989, 79:19–26.
68. Von Korff M, et al. Improving depression care: barriers, solutions, and research needs. *Journal of Family Practice*, 2001, 50:E1.

69. Bower P, Sibbald B. Do consultation-liaison services change the behaviour of primary care providers? *General Hospital Psychiatry*, 2000, 22:84–96.
70. Drummond MF, et al. *Methods for the Economic Evaluation of Health Care Programmes*. Oxford, Oxford University Press, 1997.
71. Gold MR, et al. *Cost effectiveness in health and medicine*. New York, Oxford University Press, 1996.
72. Von Korff M, et al. Treatment costs, cost offset, and cost-effectiveness of collaborative management of depression. *Psychosomatic Medicine*, 1998, 60:143–149.
73. Simon GE, et al. Cost-effectiveness of systematic depression treatment for high utilizers of general medical care. *Archives of General Psychiatry*, 2001, 58:181–187.
74. Simon GE, et al. Cost-effectiveness of a collaborative care program for primary care patients with persistent depression. *American Journal of Psychiatry*, 2001, 158:1638–1644.
75. Liu CF, et al. Cost-effectiveness of collaborative care for depression in a primary care veteran population. *Psychiatric Services*, 2003, 54:698–704.
76. Pyne JM, et al. Cost-effectiveness of a primary care depression intervention. *Journal of General Internal Medicine*, 2003, 18:432–441.
77. Laupacis A, et al. How attractive does a new technology have to be to warrant adoption and utilization? Tentative guidelines for using clinical and economic evaluations. *Canadian Medical Association Journal*, 1992, 146:473–481.
78. Sackett DL, et al. *Clinical Epidemiology: A basic science for clinical medicine*. Boston, Little, Brown and Company, 1991.
79. Institute of Medicine. *Guidelines for clinical practice: from development to use*. Washington, National Academy Press, 1992.
80. Agency for Healthcare Research and Quality. *Screening for Depression: Systematic Evidence Review Number 6*. Rockville MD, 2002.