Results

Thirty-eight studies and follow-up reports met the inclusion criteria. Details of the methodology and key findings for each of these are provided in Table 1.

1. General Observations
In recent years, research on collaborative mental health care has moved from purely descriptive accounts of collaborative models and enthusiastic reports of early program evaluation findings to more rigorous experimental studies. The focus of these studies has also begun to shift: earlier studies tended to be most concerned with the impact of collaboration on system outcomes such as service use, referral rates to specialty mental health clinics, and rates of inpatient admission. More recent studies have focused more on patient-level outcomes, often combining collaborative interventions with guideline-driven treatment protocols in an effort to improve care processes. Yet another shift in the research on collaborative mental health care has seen collaboration paired with chronic disease management and quality improvement initiatives. Most of these studies have focused on depression and have entailed varying degrees of practice or service reorganization to achieve their outcomes. A fourth wave of research is now examining the ability of such research-based programs to be translated into “real world” settings.

Increasingly, the literature is reporting collaborative interventions targeted at specific patient populations (for example, serious and persistent mental illness, depression, the elderly with depression, substance abusers, and high users of medical care), involving professionals with different skill sets, different resource requirements, and a range of implementation methods. Populations noticeably absent from the experimental literature include Aboriginal communities, the homeless, and rural communities. Diagnostic groups that are underrepresented include anxiety disorders, personality disorders, eating disorders, attention-deficit disorder, and dementia. While FPs, psychiatrists, and nurses feature in many reports, collaborative studies involving consumers, psychologists, social workers, OTs, pharmacists, and other health care providers are beginning to emerge.

Most of the studies we reviewed were multifaceted and multidisciplinary. The intent in each case was to provide a sufficiently powerful intervention that a difference from usual care could be detected. The drawback of this approach is that the more complex the protocol, the more difficult it is to predict which elements might have been responsible for any improvement in care and clinical outcome. (Lin and colleagues [4] addressed this issue in their helpful study, described below). Another drawback of the more complex studies is that their generalizability is likely to be limited. A number of these studies would be difficult, if not impossible, to implement in the average primary care practice, either because of the resources necessary to support them or because of the rigidity of the research protocol. There is an urgent need to tease out of the literature those interventions that are most effective and most cost-effective. Accordingly, some of the most useful studies were very simple and limited in scope. Those with negative outcomes are particularly helpful.

2. Study Analyses
Individuals With Depression Who Are High Users of Medical Care
A 1992 study by Katon and colleagues (5) focused on collaborative care of people with depression who were high users of medical care. The degree of collaboration in this study was high: the psychiatrist and the FP assessed the patient in the same room together and they formulated a treatment plan together; the FP implemented the plan. There was also one case review during treatment, and the FP was provided with a written treatment protocol and an article on the treatment of depression. The intervention failed to reduce patient use of medical care and did not improve patient outcomes, despite increasing patient adherence to medication for 6 months. It did, however, demonstrate some changes in physician behaviour; physicians who collaborated on the care of 4 or more patients in the 12-month study showed a significant increase in prescribing of antidepressants.

Katzelnick and colleagues also studied distressed high users of care (6) but used a more elaborate and resource-intensive approach. Physicians were given a 2-hour educational session on the diagnosis and treatment of depression; patients were given specially designed educational materials (written and video), and there was a written pharmacotherapy protocol, a standardized number and timing of follow-up visits, monitoring of treatment adherence by depression care coordinators with feedback to the FP, and a psychiatric consultation if the patient was not doing well. There was significant emphasis on
the reorganization of service delivery to achieve guideline-consistent care. The intervention improved clinical outcomes and patients’ general health status, but led to increased frequency of visits.

**Initial Treatment of Adults with Depression**

A 1995 study by Katon and colleagues (7) focused on increasing collaboration to achieve guideline-consistent care in the treatment of adult patients with major or minor depression. The collaborative elements were enhanced FP education (half-day session), monthly case conferences with a psychiatrist, and case-by-case consultation with ongoing feedback and interaction between the consulting psychiatrist and the FP. Additional elements targeted the quality of care: the initial visit with the PCP was extended to permit more time for patient education, and the consulting psychiatrist saw the patient between visits to the FP, usually twice, but occasionally 3 or 4 times. If severe side effects or treatment resistance occurred, the psychiatrist collaborated with the FP to change the medication. The psychiatrist also monitored prescription refill data to identify any patients who had stopped treatment. The study interventions resulted in improved prescribing and adherence to medication over 90 days, improved patient satisfaction with treatment, and improved outcomes for major depression (but not minor depression) at 4 months. The greatest benefit of the program was in patients who needed psychiatrist input because they were not doing well. This latter finding suggests that the timing and intensity of collaboration could be targeted, and may be more cost-effective, if focused on specific groups of patients or clinical situations.

Lin and colleagues (4) attempted to determine which components of the 1995 Katon study (7) were most likely to result in improved patient outcomes, physician education, or service reorganization. They found that, while guideline-level care was achieved during the study, once the service reorganization components were withdrawn at the end of the formal intervention, there were no enduring positive effects on patient outcomes and no sustained effect of the education that physicians had received: prescribing practices returned to preintervention levels, as did patient education and intensity of follow-up. The authors also found that the changes in physician behaviours achieved during the study were limited to patients in the intervention group and did not generalize to nonintervention patients seen during the same time period. They concluded that physician education is not enough to achieve guideline-level care and that service reorganization, including collaboration with mental health specialists, is key.

Hedrick and colleagues (8) conducted an RCT designed to compare collaborative care and C-L care in terms of their effect on depression severity, health status, and satisfaction with care. The collaborative care team consisted of a psychiatrist, psychologist, psychology technician, and social workers (no mention of the PCP). Patients who screened positive for depression were assessed in person or by telephone by the psychology technician. Members of the collaborative care team met weekly to develop treatment plans for each patient and to do 6- and 12-week reviews of each patient’s progress. The team’s recommendations were then forwarded to the PCP via the electronic medical record. The treatment options were medication or a cognitive behaviour therapy group. If the PCP questioned the diagnosis or treatment plan, the psychiatrist telephoned him or her, and consensus was achieved. The collaborative team also tracked pharmacy records. If agreed-upon prescriptions were not written in a timely fashion, the study team contacted the PCP. If 6- or 12-week evaluations showed lack of progress, a stepped care approach was taken, with referral to a mental health specialty clinic an option. A social worker called each patient on a regular basis to encourage treatment adherence and assess treatment response. In addition to these interventions, both patients and PCPs received education about depression and its treatment. The actual collaborative elements in this study were limited: the PCP was well informed about his or her patients and had some opportunity to question diagnosis or treatment plans, but there appears to have been little opportunity for case discussion and learning. Assessment, treatment planning, and monitoring were carried out by individuals who were not members of the primary care team. Outcomes showed modest benefits of collaborative care over C-L care. Collaborative care patients improved more rapidly than C-L patients, but the difference between them disappeared at 9 months. Collaborative care patients were more likely to be given a prescription for an antidepressant than were C-L patients, but the adequacy of therapy was not different between the 2 groups. Collaborative care patients showed greater improvement on disability scales. There was no difference between the groups in terms of satisfaction with care. This was a very complex protocol that divided responsibility for care among several providers and did not seem to be based on close relationships between the PCP and the mental health specialists involved. It would require considerable resources to sustain it in “real world” practice.

Another study by Katon and his group (9) involved a highly structured, manualized depression treatment program that included physician and patient education, psychotherapy, and counselling to improve medication adherence. The psychotherapy component was behavioural therapy, provided on-site by a clinical psychologist who was introduced into the primary care team for the duration of the study. Collaborative elements were as follows: the PCP received a handwritten consultation note the same day as each visit to the psychologist, a relapse prevention plan was placed in the patient’s
chart, and the psychologist reported progress to a supervising psychiatrist in a weekly team meeting. The psychiatrist recorded any treatment recommendations on a standardized form that was then communicated to the PCP by the psychologist. The PCP made any medication adjustments. In this study, the PCP appears to have been well-informed about each patient’s progress but relatively uninvolved in treatment planning and decision making. The study interventions resulted in somewhat better outcomes for patients with major depression. Patients with minor depression did not do significantly better than did control patients. Again, the finding of a differential response suggests that some patients may benefit more from enhanced collaboration than others.

Wilkinson and colleagues (10) studied the impact of having practice nurses monitor adherence to antidepressant medication under GP supervision, compared with GP treatment of depression alone. The nurses were given 8 to 12 hours of education about depressive illness and its assessment and management and provided patient education and medication follow-up under GP supervision during 5 visits over 8 weeks. One-half the patients in the study failed to adhere to medication, and there were no differences in adherence between the nurse-enhanced treatment group and the GP-only care group. Despite the large numbers of patients who failed to adhere to treatment, most patients in both groups improved significantly, and there were no significant differences in clinical outcomes between the groups.

Hunkeler and colleagues (11) also targeted patient compliance with treatment, using nurse telehealth or telehealth plus peer support, and compared these interventions with care as usual. Nurses who were already part of the primary care team were trained to provide manualized telephone monitoring and support for patients. Trained peer supporters provided telephone calls or in-person visits to share coping skills and provide emotional support. This latter part of the program was not implemented successfully. Collaborative elements included close liaison between the team nurse and the PCP, with regular feedback to the physician on each patient’s progress. Referral to a mental health specialist was available as needed. Nurse telehealth with or without peer support resulted in improved clinical outcomes at 6 weeks and 6 months, compared with care as usual. The improvement in clinical outcomes occurred despite the fact that adherence to medication was no better than in the control group. The authors infer from the results that the reason for the greater clinical improvement in the telehealth group was the emotional support provided by the practice nurses. The real world applicability of this intervention is noteworthy: it could be implemented easily by any primary care team with a relatively modest investment in additional nursing time.

A more complex study with similar aims was reported by Simon and colleagues (12). This RCT compared 2 methods of monitoring depression patients with care as usual: the “feedback only” intervention provided detailed computerized reports on the number of visits and number of prescription refills for each patient 8 and 16 weeks after the initial prescription for an antidepressant and gave primary care providers algorithm-based recommendations for treatment. The “feedback plus care management” intervention supplemented these interventions with systematic follow-up and care management by telephone: a trained depression care manager made 2 telephone calls to patients at 8 and 16 weeks to review compliance, depressive symptoms, and medication side effects. It is not clear what degree of collaboration occurred in the feedback only intervention and whether there was any direct contact with the primary care provider. In the feedback plus care management group, the care manager assisted the primary care provider in implementing treatment recommendations (such as scheduling visits) and made direct contact with the primary care provider in urgent situations. This group had better outcomes than the care-as-usual group at 6 months. The feedback only group did no better than the usual care group. As in the Hunkeer study (11), the improvement in patient outcomes associated with telephone follow-up and monitoring occurred without any significant improvement in medication adherence. Emotional support from a member of the professional team working with the primary care provider may indeed be the critical factor.

Swindle and colleagues (13) studied the impact of depression nurse specialists vs usual care in a study involving 2 VA general medicine clinics in the US. Ten experienced CNSs were assigned to the intervention clinic (1 per half-day) and were given training in the study protocol. For patients who screened positive on the PRIME-MD, the CNSs designed a treatment plan based on a guideline-driven algorithm, and after discussion with the PCP and the patient, implemented the plan and provided telephone monitoring at preset intervals. If patients failed to improve, had medication problems, or were noncompliant, CNSs scheduled an in-person visit with themselves and (or) the PCP and a change in the treatment plan would be formulated in discussion with the physician. Patients with serious medical comorbidities, intolerable side effects, or a history of unresponsiveness to medication would be referred to the mental health clinic for psychotherapy or more complex medication regimens. The CNSs would accompany these patients to their first visit and report regularly on their progress to the PCP. Collaborative elements of this study were high: all treatment decisions were to be discussed with the PCP prior to implementation; a psychiatrist was available to the CNS to discuss treatment plans or give advice as needed; the original treatment plan and any changes...
included input from the PCP; and the CNSs functioned as liaison between the mental health clinic and the PCP for any patients who required referral. Outcomes, however, were negative. Intervention patients suffered no less depression than did control patients at 3 months or 12 months, and there were no differences in the rate of antidepressant prescribing or adequacy of antidepressant dosing in the 2 groups. One likely reason for the failure of this study to demonstrate positive outcomes is that the CNSs disagreed with the PRIME-MD diagnosis in 40% of cases and did not initiate any treatment. The authors speculate that the CNS’ experience in mental health clinics with patients with severe depression might have led them to underdiagnose and undertreat in the primary care setting. This impression is supported by the fact that the more severe a patient’s depression was, the more likely the CNS was to initiate treatment, and the better the clinical outcome. This differential outcome provides further support for the concept of more targeted collaboration. However, another important lesson from this study is that personnel “imported” from specialty clinics may not function well in the primary care setting without more extensive orientation.

Peveler and colleagues (14) evaluated 2 different methods of patient education designed to improve adherence to antidepressant medications. Patients started on antidepressant medication by their GP were randomized to receive one of the following: protocol-based counselling by a trained nurse 2 weeks and 8 weeks after starting antidepressant treatment, a specially designed patient information leaflet, both interventions, or treatment as usual by the GP. Collaborative practice was limited to patient education by the specially trained nurses in the primary care setting. Medication counselling increased patient adherence over 12 weeks, but leaflets had no effect on adherence, either on their own or in combination with counselling by the nurse. Improvement in clinical outcome was seen only in patients with major depressive disorder who were receiving dosages of antidepressant equal to or greater than 75 mg of amitriptyline. Only 50% of the patients referred to the study actually met criteria for major depression, and many were receiving very low dosages of medication. It is likely that nurse counselling would have produced a larger effect on adherence and clinical outcome if there had been more patients in the study with moderately severe major depression. Patient education and medication adherence were also the focus of a study by Adler and colleagues (15), who compared a pharmacist intervention with care-as-usual in primary care patients with depression. The intervention was guided by a protocol based on AHCoPR guidelines and included a full medication history, assessment of any drug-related problems, monitoring of drug efficacy and toxicity, education of patients about depression and antidepressants, adherence encouragement, and facilitation of communication with the patient’s primary care provider. Collaborative elements included providing the primary care provider with a full medication history and recommendations for improving the medication regimen. Pharmacists were available to consult with the primary care provider over the course of the study. They also encouraged and facilitated referrals to mental health specialists. Control group primary care providers were given the results of the depression screen. Otherwise, care was as usual. Outcomes were mixed: intervention group patients were more likely to be taking antidepressants at 3 and 6 months, but their clinical status was no better than control patients at 3, 6, 12, or 18 months. Again, the disconnect between medication adherence and clinical outcome is striking.

One of the most interesting studies of collaborative depression treatment was conducted by Rost and colleagues (16), who developed an intervention that upgraded the skills of existing practice staff instead of recruiting external mental health specialists to work in the primary care setting. Prior to the start of the study, physicians underwent extensive refresher training designed to enable them to diagnose and treat major depression at guideline levels. They also were introduced by telephone to a psychiatrist who would be available for telephone backup and consultation. Receptionists or other existing administrative staff were trained to screen all patients for depression in a 2-stage screening process. If the PCP agreed with the screening diagnosis, the patient was given educational materials to read and was referred to the practice nurse, who had received 8 hours of training on detection and management of major depression. The nurse performed a structured assessment of symptoms and treatment preferences for medication or psychotherapy. The physician then met with the patient on the same day and initiated a treatment plan based on their’s and the nurse’s findings. The practice nurse contacted patients once weekly for 5 weeks or more, as needed to document symptoms and treatment adherence. To encourage continuing adherence to treatment, practice nurses contacted patients monthly for 24 months, reviewed their symptoms and medication adherence, and encouraged those who were not doing well to speak to their FP. The nurses provided the PCP with monthly summaries of the status and progress of all patients in treatment. Collaboration in this study was exclusively between the existing practice nurse, the receptionist, and the primary care provider. None of the PCPs in the study accessed the on-call psychiatrist. Collaborative elements were shared assessment roles, shared information, and shared follow-up responsibilities. Outcomes of this study were impressive: use of antidepressants and use of psychotherapy were both higher in the intervention practices than in the control practices; rates of remission were higher in intervention practices; and emotional role functioning and
physical role functioning were higher in intervention practices over the 2 years of the study. One of the strengths of this study is that it followed patients for a longer time than did studies of other interventions. It was not without costs, however. Partially through the study, it became clear that receptionists could not administer the first stage of the screening protocol in addition to their usual duties, and at the end of the 2-year study, staff felt that they could no longer continue with the protocol because the demands on their time were too great. The message here seems to be that existing practice personnel can be trained to collaborate as a team to provide guideline-level care and achieve high quality outcomes, but that additional resources are needed to fund the extra time that this requires. Rost conducted a post-hoc analysis of the data from this study to determine whether the costs of the program were justified in terms of the improved patient outcomes (17). They reported 2 important findings. First, the cost-effectiveness ratio for improving primary care depression results in comparable or greater cost-effectiveness than smoking cessation counselling, hypertension pharmacotherapy, hypercholesterolemia pharmacotherapy, chronic obstructive pulmonary disease rehabilitation, or depression screening alone. Second, incremental QoL years increased with time, while incremental costs declined. That is, depression disease management became more effective and less costly over time. Another key message is that collaboration with the study’s consulting psychiatrist failed to happen after PCPs and the psychiatrist were introduced by telephone. Face-to-face meetings and (or) pre-existing clinical relationships might have resulted in more use of the psychiatrist by the PCPs.

**Persistent Depression and Relapse Prevention**

Katon and colleagues (18) tested collaborative care targeted at primary care patients with depression who had been treated by their PCP but who had persistent or unresponsive symptoms. The study intervention provided enhanced patient education, assessment by a psychiatrist in 2 on-site sessions, a telephone call from the psychiatrist between sessions, and additional sessions as necessary. The psychiatrist also monitored adherence to medication through pharmacy data on prescription refills. Collaborative elements included feedback and treatment recommendations to the primary care provider after each clinical session and feedback about patient adherence to medication. Outcomes were positive: adherence to medication was better in the intervention group than in the usual care group at 3 months and at 6 months, more intervention patients received guideline-level care, and intervention patients had better clinical outcomes at 3 and 6 months. An analysis of the cost effectiveness of this program was subsequently reported by Simon and colleagues (19). These authors found that depression treatment costs were approximately US $340 greater for the collaborative care group and that these costs were due to increased antidepressant prescription costs and more frequent outpatient visits. The findings of these 2 studies suggest that a stepped approach to collaboration, reserving psychiatrist input for primary care patients who have a demonstrated need for specialist care, may be a more cost-effective use of collaboration.

Walker and colleagues further analysed the data from the Katon 1999 study (20) and attempted to determine whether severity of depression had an impact on the effectiveness of the collaborative care intervention for this population. They compared the outcomes of collaborative treatment of depression versus usual care in patients identified as having severe versus mild or moderate depression prior to randomization. They found that there was a trend for intervention patients with more severe depression to improve faster than control subjects between baseline and 3 months, but that after 3 months, the intervention patients developed worsening symptoms. Notably, the actual intervention (seeing the psychiatrist) ceased at 3 months. Moreover, the investigators found that the worsening of symptoms was not due to a decrease in adherence to medication. In contrast, patients with less severe depression also made significant gains during the first 3 months and continued to adhere to treatment but were able to maintain their gains with visits to the PCP. The authors speculate that, for patients with more severe depression, once the support of the psychiatrist was discontinued, improved pharmacotherapy alone was not adequate to maintain improved outcomes. They conclude that patients with more severe depression may need more intensive clinician follow-up and (or) psychotherapy to achieve sustained improvement.

Another study by Katon and colleagues (21) focused on patients who had recovered from depression but were at risk of relapse. A “depression specialist” met with patients in the primary care setting to educate them about depression recurrence, self-care, prodromal symptoms, and problem-solving strategies and developed a personalized relapse prevention plan with each patient. These meetings were supplemented by telephone calls from the depression specialist at preset intervals and by 4 personalized mailed questionnaires over a 12-month period to document any recurrent symptoms and medication adherence. Collaborative elements in this study were limited: PCPs were notified about each patient’s progress on a regular basis, and the relapse prevention plan was shared with the PCP. Intervention group patients had better medication adherence than did control subjects, and they had fewer depressive symptoms but did not experience fewer episodes of relapse. As in studies reviewed above, this study demonstrated that collaborative interventions involving enhanced patient education and longer term monitoring can improve adherence to medication, but adherence alone may
not produce better outcomes. Also, relapse prevention may require a more personalized and intensive surveillance plan than this study was able to provide.

**Depression in the Elderly**

Two RCTs involving collaborative care have focused on depression in the elderly. Unützer and colleagues (22) conducted a study (IMPACT) comparing a multifaceted collaborative care model with care as usual by the primary care provider. The study took place in 18 primary care clinics in 5 US states. The major intervention component was the use of a trained DCS (a psychologist or nurse) who assessed patients who met criteria for major depression or dysthymia, provided them with educational materials about depression, discussed their treatment preferences, and then reviewed the assessment with a supervising psychiatrist and a liaison primary care expert (not the patient’s own PCP) in a weekly team meeting. The DCS then worked with the patient’s own PCP to establish a treatment plan according to a recommended treatment algorithm. Medication and problem solving treatment were both available. The algorithm was based on a stepped approach to treatment. DCSs also provided monitoring in person or by telephone every other week, and once patients had achieved recovery, worked with them to develop a relapse prevention plan. DCSs contacted the patient monthly to provide monitoring and support for the rest of the 12-month period. The collaborative elements of this program were limited: the primary care provider was involved in the initial treatment plan, but after that, his or her involvement appears to have been limited to writing prescriptions. Subsequent treatment decisions and the major case review functions of the project were carried out by the study team. Outcomes were statistically good: intervention patients had higher rates of depression treatment, greater satisfaction with their care, and greater improvements in depression at all follow-up points up to 1 year than did control patients. The benefits of the program increased in a dosage-response manner over the 12 months of the trial. However, even under research conditions, only one-half the intervention patients experienced a 50% reduction in depressive symptoms, and only 30% experienced full remission, and these outcomes required a fairly high level of organizational support to achieve. Costs of the program were $553 per patient over 12 months. Although collaboration with the primary care provider seems to have been quite limited, this program has several strengths: it took into account patient preferences for treatment with medication versus psychotherapy, it used a “stepped” approach to care, it used more costly mental health specialists only for patients who were not doing well, and it was carried out in many clinics with diverse patient populations in geographically different areas of the United States.

A subsequent analysis of the data from this study by Harpole and colleagues (23) sought to determine whether the presence of multiple comorbid medical illnesses affected patient response to the depression treatment program. The patients in this study had an average of 3.8 chronic medical conditions. Those with more medical problems had higher depression severity. Despite this, there was no difference in response to the IMPACT depression treatment program. Thus even elderly patients with significant comorbid medical illness and more severe depression benefited from the intervention.

Bartels and colleagues (24) examined the impact of treatment location on the likelihood that elderly patients with depression, anxiety, or substance abuse would engage in care. They compared mental health services integrated into the primary care setting with facilitated, enhanced referral to traditional specialty mental health clinics. The integrated clinics met basic inclusion criteria. They were located in a primary care setting, had no signage identifying them as mental health services, provided treatment by licensed mental health or substance abuse professionals, had verbal or written communication with the primary care provider, and held appointment times within 4 weeks. Similarly, the enhanced referral mental health clinics met the following criteria: they were not located in a primary care clinic, treatment was by licensed mental health or substance abuse professionals, patients were assisted with transportation, financial support was provided to the patient for treatment costs, and follow-up was made if the patient did not attend. Collaborative elements were limited to colocation and verbal or written communication, with the primary care provider in the intervention arm. There were no collaborative components described in the enhanced referral arm of the study. Patients in the integrated clinics had greater rates of engagement than did those who were randomized to the enhanced referral arm. Both models had similar proportions of patients with only one visit, but integrated model patients were more likely to return for subsequent visits. The integrated model was also associated with a higher mean number of treatment visits for patients with depression and substance abuse but not anxiety disorders. Although the degree of collaboration reported in this study is limited, it makes an important addition to the collaborative care literature: location does matter. Even with transportation assistance and cost coverage for traditional off-site mental health services, patients were more likely to engage in treatment if the service was provided in the primary care setting. It is not clear whether familiarity with the setting, concerns about stigma, or the convenience of no extra travel time were determining factors in this preference. The results of this study are further supported by 3 RCTs from the addictions literature (25–27), which examined the impact of integrated vs separate primary care and substance abuse treatment. Again,
these programs provided geographical integration of services, with no information about collaboration between health care providers, but in all 3 studies, patients did significantly better in the integrated models, and patients with poorer health benefited the most.

**Services for Children and Adolescents**

A study by Abrahams and Udwin (28) evaluated a new primary care-based clinical psychology service for children and adolescents in the UK and compared it with a traditional mental health service for children and adolescents. The new service aimed to support primary health care teams by providing consultation and training in psychological skills and child mental health issues, to improve management of mental health problems within the general practice setting, and to facilitate access to other secondary and tertiary level services where necessary. Details about the intervention are limited. Evaluation focused on the new service’s effect on GP referrals, waiting times, rates of engagement, GP and patient satisfaction, and stigmatization. After 12 months, there were no differences between the number of referrals to the primary care-based service and the traditional service, but significantly more of the referrals to the primary care service came from GPs. Clients reported satisfaction with the service and, in particular, feelings of being less stigmatized. GPs reported high levels of satisfaction with the service. There were no differences in the proportion of cases who failed to attend their first appointment, but of those who attended, patients in the primary care-based service required fewer sessions to complete their treatment. The authors speculate that this was because many patients were seen earlier in the course of their problem and thus required shorter courses of treatment. If replicated in larger studies, this finding would be of considerable importance to both clinicians and those who fund clinical care.

**Services for Individuals with Serious Persistent Mental Illness**

Warner and colleagues (29) developed a patient-held care record designed to improve information sharing between health care providers and increase continuity of care and patient satisfaction. They conducted an RCT of its use in 55 UK patients with long-term mental illness who were being cared for in the general practice setting, with ongoing input from one or more mental health care providers. The record was designed to contain the names and contact information of all key providers, brief clinical notes, medication details, and dates of future appointments. Patients in the intervention arm were given verbal and written instructions on how to use the record. GPs and other care providers were oriented to the study and taught how to use the record. Patients in the control arm received care as usual. The study was conducted over 12 months. Outcomes were primarily negative: there was a low frequency of use by both patients and health care professionals alike, and carrying the record had no significant effect on mental status or satisfaction with care. Patients with active psychosis were significantly less likely to use the record than were other patients.

Lester and colleagues also studied the usefulness of patient-held clinical care records (30), focusing on patients with schizophrenia who were receiving shared care. Their study was designed to show whether the records resulted in any changes in clinical outcome, satisfaction, or service use. Focus groups with clinicians were used to develop the content of the patient-held record, and all health professionals involved in the study received training in the use of the record. After 12 months of implementation, most patients still had the record and had used it, particularly to communicate with their key worker, but there were no differences in clinical outcome, satisfaction, or use of services, compared with patients in the control group. Taken together with Warner’s study (29), Lester’s trial of patient-held records suggests that written notes carried back and forth between providers by patients may be difficult to implement and may have some positive effects on communication between providers but are unlikely to change clinical outcomes.

Burns and colleagues (31) examined the impact of teaching UK GP nurses to carry out regular, structured clinical assessments in patients with schizophrenia who were receiving depot medications. This interesting study built on the results of a previous study by the same investigators (32), which found that GPs who were trained to do the structured assessments were more likely than were control subjects to make changes in patients’ drug regimens and (or) to make referrals to CPNs. The GPs stopped doing the assessments after 6 months, however, because of time pressures. The current study was designed to determine whether it was more feasible to have practice nurses take over this aspect of care. Patients on depot neuroleptics were randomized to receive regular structured assessments by practice nurses or care as usual. Some nurses volunteered for training to do the assessments in a day-long workshop, whereas other nurses were trained one-on-one, as the program was implemented in their practice setting. The design of this study had a significant flaw: although the nurses were all established members of the primary care teams where the intervention took place, they were given no direction about what to do if their assessments uncovered problems or abnormal findings. Outcomes were, accordingly, mixed. Although the nurses were significantly more consistent than the GPs in carrying out the structured assessments and were able to detect and record large numbers of problems over the 2 years of the study, their observations were not communicated to the GPs and did not lead to
appropriate clinical action. As a result, there were no differences between the study patients and the control subjects in either the process or outcome of care. Interestingly, the nonvolunteer group of nurses who waited for one-on-one training and who were, presumably, less enthusiastic about the program, were significantly less compliant with performing assessments. With a higher degree of collaboration between nurses and GPs and with more careful training and orientation, this study might have produced more positive findings.

Gater and colleagues (33) developed a multiyear project to evaluate the impact of a community-based multidisciplinary team on the quality of care received by UK patients with SMI. The team comprised 2 psychiatric nurses, a social worker, an OT, a psychologist, 2 consulting psychiatrists, and 3 senior registrars. The mental health team established close links with the primary care team and delivered care in the GPs’ clinics. A clustered randomized design was used to compare the quality of care received by patients from one group of GPs who were linked to the new community team with patients from a group of GPs who continued to use the traditional hospital-based service. Patients in the intervention group were assigned a key worker who was responsible for ongoing contact with them and coordination of their care. Comprehensive assessments were carried out to identify what treatment needs were unmet, the targeted treatment plans developed, the regular clinical reviews carried out, and the rehabilitation plans that were formulated and implemented. Collaboration with the primary care provider was established through regular meetings with the primary care teams and weekly psychiatric clinics in the GP practices. After 2 years, quality of care was higher in the intervention group, compared with the control group. Patients had fewer unmet treatment needs and were more satisfied with the care they received. Also, specific types of intervention were more often appropriately provided to the intervention group, including regular monitoring, psychological treatments, social stimulation, and sheltered activities. A major strength of this study is that it was able to pair collaboration with quality improvement initiatives and to achieve sustained positive effects over a long period of time. After the active study interventions had been withdrawn, the investigators continued to monitor patients for an additional 2 years. At 4 years after implementation of the community-based team, the improved quality of care was maintained.

Bindman and colleagues (34) also studied the impact of link workers in the primary care setting, using case-control methodology to determine whether this way of providing care affected hospital bed use, whether a focus on the patients with SMI could be maintained, and whether the service could “pay for itself.” In one UK general practice, team members from the CMH team were assigned to all patients with SMI being cared for by the GP. The mental health team members acted as link workers between the general practice and the CMH team. Their role was to establish relationships with the GP, coordinate and facilitate referrals, provide care for CMH team patients who preferred to be seen in the primary care setting, and assess and advise on patients with common mental disorders who were being treated by the GP. A similar, geographically adjacent general practice that was served by a traditional mental health service served as the control. Collaborative elements were moderate: the link workers provided care to patients with SMI in the general practice or the patient’s home setting, shared information with the GPs, facilitated referrals as needed, and supported the GPs in the assessment and care of patients with SMI. They also provided assessment and advice about patients with less severe mental health problems. Outcomes were positive: the service responded to the needs of GPs without losing its mandated focus on the patient with SMI and without producing increases in rates of admission to the specialist psychiatric services. There was, however, no evidence of a compensating cost offset to pay for increased costs of the new service.

Cook and Howe (35) studied the impact of an expanded, enhanced primary care team on the clinical status and social functioning of patients with continuing psychosis. All patients in this UK study had lost contact with specialist mental health services and were being cared for solely by the GP. The authors used a before and after design with no control group. The study interventions included an expanded role for the GP, introduction of assertive care management, and the addition of specific occupational therapy interventions designed to improve social functioning. The GPs’ expanded role included setting up a register of patients with severe mental health problems; using patient held records to facilitate team communication; collaborating with accommodation providers; and participating in regular reviews of patients with the visiting psychiatrist during meetings held in the primary care clinic. In addition, nonmedical staff in the GP clinics were given training about severe mental health conditions, with modelling of accepting and facilitative behaviours. Collaboration in this program was high and occurred at several interfaces: between the GP and the occupational therapy team, between the GP and the visiting psychiatrist, and between the GP and the community accommodation providers. After 24 months of intervention, there were significant improvements in the social functioning of the patients, their ADL, occupational functioning, cognitive functioning and living conditions. Clinical symptoms also improved significantly, including hallucinations and delusions, anxiety, and depression. The annualized costs of the intervention per patient were £1584, which the authors found to be comparable with or less
than other community interventions with this patient population.

Druss and colleagues (36) used increased collaboration to address the medical treatment needs of VA patients with SMI. In an RCT that reversed the usual trend of introducing mental health care providers into the primary care setting, these investigators studied the impact of taking primary care into the VA mental health clinic. The control group received medical care as usual in a separate VA medical clinic. Collaborative elements were moderate: a medical nurse practitioner provided most of the basic medical care, supervised by an assigned FP, who also acted as a liaison to physicians in the psychiatry services and general medicine services and attended weekly meetings of the mental health team. The integrated clinic emphasized 2-way communication about changes in mental health or physical health status and treatment, patient education, preventive services, regular monitoring, and follow-up. Outcomes were positive: patients in the integrated clinic were more likely to take a primary care visit over the ensuing year, were less likely to have an emergency room visit, were more likely to have received guideline-consistent medical care, reported better physical health status, and were less likely to report a problem with continuity of care. Again, this study points to the benefits of colocation and underscores the potential improvements that can be achieved through well-coordinated care for patients with SMI.

Self-Help and Collaboration with Patients or Consumers
Lovell and colleagues (37) built on a previous systematic review of the literature that showed that self-help treatments in primary care may have the potential to improve the overall cost-effectiveness of mental health service provision (38). They used an uncontrolled before and after design to study the effectiveness of a rapid access self-help clinic run by a specially trained nurse in a primary care setting in the UK. The nurse met with patients who were diagnosed with depression or anxiety by the GP, conducted an assessment, and developed an individually tailored self-help plan that included self-help advice and previously published self-help resource materials relevant to the patient’s diagnosis. The nurse then met with the patient every 2 weeks for 15 minutes to monitor progress. Patients who were felt to be inappropriate for self-help were referred back to the GP or to a mental health service. The clinic was located within the general practice and involved collaborative decision-making with the GP about which patients were appropriate for the service and which required a higher level of intervention. In addition, there was a high level of collaboration between the nurse and the patient as self-therapist. Satisfaction with the clinic was high for both patients and GPs. The clinic achieved clinically significant and reliable change (as previously defined changes in assessment scores) for most patients and outcomes that were comparable with the published treatment outcomes for primary care counsellors in the UK. More rigorous study methodology is needed to verify the usefulness of this approach, but it has strong face validity and could occupy an important place in a mental health system that offered a range of stepped-treatment options based on symptom severity, patient preference, and mental health specialist availability.

Quality of Care Initiatives
Wells and colleagues (39) developed a multisite US initiative to evaluate a quality improvement program for depression treatment. The program used a combination of research staff and existing practice nurses to improve access to guideline-level medication treatment or psychotherapy for depression. Patient screening, nurse training, and PCP education were provided by research staff. PCP education was extensive: it included clinician manuals, monthly lectures, and academic detailing, as needed. Practice nurses assessed patients, provided education, and developed activation plans for each patient, supported by materials developed specifically for the project. PCPs were asked to consider the results of the nurses’ assessment in their treatment plans. For patients randomized to the medication arm, nurses were trained to provide follow-up assessment and support via monthly contacts for a minimum of 6 months or a maximum of 12 months. Patients randomized to the psychotherapy arm received 12 to 16 sessions of manualized psychotherapy from a local therapist. Level of collaboration with the PCP appears to have been low; beyond participating in the educational component, their role seems to have been to receive recommendations from the practice nurse. There is no mention of direct communication between the PCP and the psychotherapist, who appears to have been local but not on-site, and no mention of PCP access to consultation if patients were not doing well. Outcomes in this project were positive. Patients in the intervention arms were more likely to have made a visit to a mental health specialist (not defined) over the 12-month period; patients in the medication arm were more likely to receive appropriate levels of medication at both 6 and 12 months; patients in the psychotherapy arm were more likely than were control subjects to have received therapy; and intervention patients were less likely to have depression at 6 and 12 months. There were differential responses for patients with major and minor depression, with major but not minor depression patients showing benefits over usual care. It is disappointing that this study, which produced positive results, appears to have had so little direct involvement of the PCP. It does, however, underscore again the role for practice nurses in providing support for patients started on medication and provides further support for targeting interventions at patients with more serious depression.

A series of subgroup analyses and follow-up studies were conducted by Wells’ group of investigators. Ünützer and
colleagues (40) found that those patients in the medication program who had 6 additional months of nurse follow-up were more likely to be taking antidepressants at 18 and 24 months. Sherbourne and colleagues (41) found that the likelihood of meeting criteria for depression was no less in the intervention groups than in the control group at 24 months, but that improvements in mental health-related QoL achieved by the psychotherapy intervention (but not the medication intervention) were sustained for a full 24 months. The authors conclude that psychotherapy has important long-term benefits over medication and that this option should be offered to patients in primary care. Another post-hoc analysis by Wells and colleagues (42) found that, even as long as 57 months after the intervention, there continued to be modest benefits for the intervention groups (primarily psychotherapy), compared with the control groups, and that this benefit was concentrated primarily in 2 groups of minority patients. Finally, Wells and colleagues (43) reported a subgroup analysis that focused on outcomes for patients with subthreshold depression vs major depressive disorder. They found that patients with baseline subthreshold depression who received the psychotherapy intervention were significantly less likely to have probable disorder and unmet depression treatment needs than similar patients in usual care at 57-month follow-up, whereas those seen in medication clinics showed no difference in likelihood of probable disorder, compared with control subjects. Among patients with baseline depressive disorder, there were no significant effects of the medication quality of care intervention on likelihood of having depression at 57 months. These findings again support the existence of a differential response to treatment for patients with major and minor depression: patients with major depression showed early gains from medication management, while patients with subthreshold depression did better in the psychotherapy quality improvement arm, and the benefits appear to have lasted longer.

Developing Collaborative Care Relationships

We found 4 experimental studies that evaluated interventions designed to increase collaboration between existing traditional mental health services and local primary care providers. This is an important and very understudied area. In the first study, Mildred and colleagues (44) used a before and after design to evaluate the impact of changing the policies and culture of a CAMHS located in Melbourne Australia to be more GP-aware and inclusive. Staff in the mental health clinic were given education about GP skills and training and about the realities of working within the general practice context. Clinic policies were also changed to mandate documentation of the name and contact information of each patient’s GP; a standardized letter was developed to facilitate communication with the GP, and an automated computerized checklist was implemented to prompt the clinician to inform the GP about the patient’s progress at 6 monthly intervals. The project also provided local GPs with the opportunity to take an accredited training course on common mental health problems, with topics generated by the GPs themselves. In addition to disorder-specific updates, each of these seminars provided GPs with information about relevant services provided by the clinic. At the end of the 12-month project, case managers in the mental health clinic reported a doubling of regular telephone contact and a substantial increase in 3 monthly or more frequent written communications with GPs. There was also a doubling of the number of shared cases (not defined) for these same case managers. GPs reported benefits from the educational interventions, and after 12 months, their perceptions of the helpfulness of the mental health clinic had improved significantly. This study is a useful reminder that collaboration is not limited to services colocated in primary care and that increasing collaboration between traditional mental health services and primary care providers requires careful planning, staff “buy in,” and service reorganization to support the desired changes.

A study by Emmanuel and colleagues (45) in the UK was much less successful at improving collaboration between formal mental health services and local GPs. This 6-month RCT was designed to enhance liaison between the services and GPs through implementation of written guidelines. Key workers of patients in the intervention group were asked to increase their collaborative activities and were given such specific examples of how to do so as informing the primary health care team about each patient contact, giving verbal or face-to-face feedback to the primary care team on at least 2 occasions during treatment, reviewing patients at the GP’s practice, and discussing the possible use of a patient-held shared care record. Every 2 months, the key workers were contacted and reminded of the expectation that they increase their collaborative activities. Key workers of patients in the control group were simply informed that their patient was involved in the study. Outcomes of this study were poor; only 42% of key workers in the intervention group felt that they had succeeded in increasing their collaboration with the primary health care team and only 21% felt that they had changed their normal practice in any way. Staff in the mental health services indicated that they did not have enough time to spend on the extra tasks which were expected of them. Not surprisingly, patients in the intervention group did not fare better than those in the control group, except in social functioning. The authors conclude that improved collaboration can only be achieved with “strenuous effort” at the level of the secondary provider and that it was unlikely to happen without additional resources. Unlike the Mildred study (44), the mental health services did not mandate the changes in practice as formal policy changes,
and did not put in place any organizational supports to facil-
tate the desired changes in behaviour.

A third study by Byng and colleagues (46) reports on the
results of the MHLP, an innovative British intervention
designed to support the development of shared care for
patients with chronic SMI. This RCT randomized 24 general
practices in inner city London to the MHLP or to service as
usual. In each intervention practice, focus groups were held
with health professionals, practice staff, and consumers to
identify problems in the delivery of mental health care for
patients with chronic severe disorders. Trained facilitators
assisted each practice in the implementation of a specially
designed tool kit, which guided the creation of local shared
care arrangements and developed customized shared care
agreements between the primary care team and the local CMH
team. Link workers were assigned to each practice and their
roles and responsibilities (and those of the practice team) were
defined. The MHLP also provided assistance with the devel-
opment of chronic disease management systems in each prac-
tice (for example, patient registers, databases, audits, and
systems for recall). Collaborative elements in this interven-
tion were designed to be high. Outcome measures addressed
the degree of implementation of the intervention, quality of
care markers, patient and GP satisfaction, and relapse rates.
Follow-up was for a year or less. Outcomes were mixed. The
degree of implementation varied greatly, with some practices
considerably more active than others. Most practices did not
succeed in setting up systems for review and recall, for exam-
ple, there were no differences between intervention and con-
trol practices in the processes of physical or mental health care
for the target population and no differences in patients’ per-
ception of their general health, unmet service needs, or satis-
faction with services. Paradoxically, there were fewer
relapses in the intervention practices and greater GP satisfac-
tion with mental health care. There appear to have been prob-
lems with “buy in” in this intervention and, consequently,
with implementation, and the period of follow-up was very
short. It is likely that such a complex, multifaceted program
would benefit from a longer lead-in period and longer evalua-
tion to detect changes in practice.

Finally, Sharma and colleagues (47) studied the impact of
establishing a primary care-based shared mental health ser-
vice in Liverpool (UK), with priority given to the severely
mentally ill, compared with care as usual in 5 similar, geo-
graphically adjacent general practices. The collaborative
interventions were extensive and included general practice-
based consultation and follow-up by the team psychiatrist for
all patients with SMI; monitoring of these patients by a prac-
tice-specific CMHN; development of practice registers of
all patients with SMI; practice-based assessment and monitor-
ing by a CMHN for patients with common mental health dis-
orders; telephone advice and backup by the consulting
psychiatrist; and weekly multidisciplinary team meetings in
the general practice to review care of patients with SMI and
discuss any patients the GP wants assistance with. The inter-
vention practices also had formal guidelines for referral and
formalized roles and responsibilities for all clinicians. The
study evaluated referral rates, waiting times, attendance rates,
GP and patient satisfaction, and general measures of patient
health and social functioning (the Health of the Nation Out-
come Scale). Outcomes were positive: there was a 38% drop-in inpatient bed use in the intervention practices over 3
years, compared with an increase in the control practices.
Average waiting times for an appointment in the intervention
practices dropped from 6 weeks to 3 weeks, while waiting
times remained unchanged at 4 to 5 weeks in the control prac-
tices. No show rates in the intervention practices dropped
from 32% to 18%, compared with a stable rate of 32% in the
control practices. GP satisfaction with waiting times, access to
CMHs, overall communication, and service delivery was
significantly higher in the intervention practices, compared
with the control practices. After 6 months of intervention, the
Health of the Nation Outcome Scale showed an improvement
in health and social functioning, with a larger effect in patients
with severe mental health problems. Like the Gater study (33),
this project is particularly interesting because it was con-
ducted as a permanent, sustained program in a real-world
setting.