

Collaborative Care Models for the Treatment of Depression

Based on a presentation by Wayne Katon, MD

Presentation Summary

The quality of treatment of depression in the primary care setting is limited by inadequate patient education, lack of adherence to treatment regimens, poor patient follow-up, and the absence of close collaboration between medical and mental health systems. Integrated models of care may help overcome some of these barriers and improve adherence, satisfaction with care, and outcomes. The health and economic outcomes of randomized controlled trials in which 2 models of collaborative care—psychiatrist and psychiatrist/psychologist plus primary care—were compared with usual primary care. Interventions were delivered at multiple levels and included enhanced patient education and monitoring, physician

training, patient-physician interaction, and integration of a psychiatrist or psychologist into the primary care setting. After the interventions, patients with major depression showed significant improvements in adherence, satisfaction with care, and depressive outcomes, whereas, in patients with minor depression, outcomes were not significantly affected by the intervention. An analysis revealed that the cost of the interventions was higher than usual care, and that there was little evidence of any cost offset. However, in terms of cost effectiveness, the cost of successfully treating one patient with major depression was lower with the interventions, and the incremental costs of collaborative intervention were substantially lower than the usual primary care costs.

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Despite the availability of effective medications and psychotherapy for major depression, few patients in primary care receive these therapies. Among those who do, only 30% to 40% receive guideline levels of antidepressant treatment and fewer than 10% receive specific psychotherapy.

This situation is likely to increase in managed mental healthcare, in which psychotherapy sessions are severely curtailed. Wayne Katon, MD, Professor and Director of Health Services and Epidemiology in the Department of Psychiatry and Behavioral Sciences at the University of Washington, Seattle, discussed

some of the problems of treating depression in the primary care setting and described 2 models of integrated care that have been shown in randomized trials to improve the treatment process and the outcomes for those with major depression.

Challenges of Depression Management in Primary Care

Depression management has several challenges, including correctly diagnosing patients and selecting medication. However, in primary care, appropriate treatment is further complicated by limited patient education opportunities and expert resources. Some of the challenges described by Dr. Katon include:

Lack of Adequate Patient Education. In a primary care visit that usually lasts 10 to 15 minutes, the primary focus often is to ensure that no significant medical problem has been overlooked. Once a diagnosis of depression has been considered, the physician may have little time to educate the patient about the illness. This problem can be especially acute in the case of depression because of the stigma attached to this diagnosis.

Lack of Adherence. Lack of long-term adherence to medication is a problem that is universal to the treatment of all chronic illnesses. Medications are not perfect, and their long-term use leads to side effects, incurs costs, and reduces patients' sense of autonomy and control. Adherence is a problem not only in primary care but also in specialty clinics, as illustrated by a study that examined rates of compliance after 6 months of treatment (defined as the minimum length of treatment, according to the Agency for Health Care Policy and Research [AHCPR] guidelines).¹ After 6 months, only 50% of patients in the specialty clinic were still taking their antidepressant medication, and the figures for patients in

primary care were even lower, at approximately 35%. Therefore, keeping patients on medication for 6 months is often problematic. A consequence of prematurely terminating medications in patients with major depression is a rate of relapse of approximately 50%.

Lack of Close Follow Up. This is a problem of greater concern in primary care than in specialty care. In both fee-for-service and health maintenance organization (HMO) patients, the average number of visits after a diagnosis and prescription fill is 2 per 8 to 10 weeks.^{2,3} Although this represents the norm in primary care, most specialists would consider it inadequate for appropriately monitoring response to treatment and believe that it could be one reason for lack of adherence.

Lack of Close Collaboration. The separation of medical and mental health systems is associated with a lack of communication, which is exacerbated by legal and privacy considerations, such as not placing the notes of a psychiatrist in a patient's chart.

Lack of Availability of Specific Psychotherapy. Another problem is that although specific and effective psychotherapies are available, most physicians are not trained to deliver them, and psychotherapists are usually not integrated into primary care clinics.

Models of Collaborative Care

To improve adherence to antidepressive treatment, satisfaction with care for depression, and outcomes in the healthcare system, the University of Washington and the Center for Health Studies at Group Health Cooperative, a large HMO located in the Northwest, tested 2 models of collaborative care in their primary care system—a psychiatry-primary care model² and a psychiatrist/psychologist-primary care model.³

To test the success of the models in terms of outcomes and cost effectiveness, Dr. Katon and his colleagues recruited patients for 2 randomized, controlled trials. For both trials, patients in a large Group Health Cooperative primary care clinic who had definite or probable major depression and who were beginning treatment with antidepressants were referred by primary care physicians and randomized to an intervention or a control arm. The control arm in the psychiatry and psychiatry/psychology studies involved usual primary care, which in addition to recognition of mental illness and the issuance of an antidepressant prescription also allowed physician referral or patient self-referral to the HMO mental health clinic. As a result, patients in this group were receiving active treatment.

Psychiatry-Primary Care Model. For the psychiatry-primary care model study, 217 patients were randomized to either the control arm or an intervention arm, with follow-up at 1, 4, and 7 months.

The intervention arm was integrated at multiple levels of care (Table 1). An educational videotape, pamphlets on depression, and an interactive questionnaire were provided to educate and empower patients in this arm to collaborate in the care of their illness. Adherence, side effects, and depressive outcomes were monitored closely by psychiatrists. Primary care physicians received a half day of training in the guidelines for care and also received case-by-case feedback from a specialist. The process of healthcare delivery, in particular, was changed for the intervention arm patients, with integration of the psychiatric consultant into the primary care setting, increased frequency and intensity of visits with the psychiatrist, increased interaction between primary care and specialist physicians, and monitoring of adherence using automated prescription refill data.

According to Dr. Katon, a surprising finding from this study was that about 50% of patients in whom treatment for depression was initiated by their primary care physician had only 2 to 4 depressive symptoms and met the criteria for minor depression. Another interesting observation was that in 50% of the intervention cases, the psychiatrist changed the medication at least once, either because of side effects or treatment resistance. When adherence was examined, the intervention had a robust effect in increasing the percentage of patients who were on an adequate dose of antidepressant treatment for 90 days or more (Table 2), an improvement in adherence that persisted even after 7 months.

Patients with major depression were more satisfied with their care and also more likely to find antidepressants helpful after the intervention, whereas in patients with minor depression, the intervention did not change their satisfaction with care, although a higher percentage of

Table 1. Psychiatrist-Primary Care Intervention

<p>Patient</p> <ul style="list-style-type: none"> ■ Educational videotape ■ Patient activation using a doctor-patient questionnaire ■ Increased physician education time ■ Closer monitoring of adherence, side effects, and depressive outcomes <p>Physician</p> <ul style="list-style-type: none"> ■ Half-day training session ■ Case-by-case feedback from a specialist ■ Didactics, case conferences <p>Structure of healthcare</p> <ul style="list-style-type: none"> ■ Increased frequency and intensity of visits ■ Psychiatric consultant integrated into primary care ■ Surveillance of adherence by automated data
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patients found antidepressants to be helpful (Table 2).

The most important difference was noted in depression outcomes between patients with major or minor depression. At 4 months, the intervention led to a 50% reduction in severity in approximately 75% of patients with major depression compared with 44% of control patients. With minor depression, no intervention effect was observed, because approximately 65% of those in both groups showed improvement. As a result, in patients with minor depression, although adherence to medication increased dramatically after intervention, outcomes did not improve significantly, because many of the patients with minor depression really had an adjustment disorder and improved spontaneously after some visits to the physician. Therefore, they may not have required high antidepressant treatment dosages, noted Dr. Katon.

Psychiatrist/Psychologist-Primary Care Model. In the second collaborative care model, the psychiatrist/psychologist intervention, studied by Dr. Katon and colleagues, 153 patients were randomized to either a control arm or an intervention arm (Table 3). In this model, the psychologists monitored adherence, side effects, and maladaptive cognitions about medications and served as liaisons with the primary care physicians with regard to medical issues. Psychologists also tracked patients weekly using a Beck depression short form that was reviewed weekly by a psychiatrist, who then made medication recommendations that were communicated to the primary care physician. Patients also had 4 to 6 cognitive behavioral therapy sessions with the psychologist.

The results of this study showed similar outcomes, with major depressives being more affected by the intervention than the minor depressives.

Dr. Katon and his colleagues concluded from these 2 studies that col-

laborative management of major depression improves adherence, satisfaction, and depressive outcomes. Among patients with minor depression, collaborative care improved

Table 2. Outcomes of Psychiatrist-Primary Care Model Versus Usual Care for the Treatment of Depression*

Outcome	Major Depression			Minor Depression		
	Intervention	Control	P value	Intervention	Control	P value
Adequate dosage	75.5	50.0	<0.01	79.7	40.3	<0.001
Satisfaction with care	93.0	75.0	<0.03	94.4	89.3	NS
Helpfulness of Antidepressants	88.1	63.3	<0.01	81.8	61.4	<0.02
Depression outcomes†	74.4	43.8	<0.01	60.0	67.4	NS

*Results are expressed as a percentage of the total number of patients in each group.

†Outcome was measured as a 50% reduction in severity at 4 months. NS = not significant.

Table 3. Psychiatrist/Psychologist-Primary Care Intervention

- Educating about biology/psychology of depression
- Monitoring adherence/side effects, depressive symptoms, and maladaptive cognitions about medications
- Communicating with the primary care physician about symptoms, adherence, and medication issues
- Meeting weekly with the psychiatrist and a team of psychologists
- Helping patients schedule an increase in positive activities (behavioral experiments)
- Reducing negative thought patterns
- Working to improve specific behavioral skills, that is, assertiveness sessions (5 to 6, optional)

medication adherence and one measure of satisfaction, but it did not result in more favorable outcomes after intervention, because both groups improved. This suggests that the majority of patients with minor depression improve with usual primary care and do not require extra mental health resources in most instances.

Although collaborative care resulted in improved outcomes, Dr. Katon pointed out that approximately 25% of patients were still ill after 4 months and probably required additional specialty care. In a naturalistic setting, the step model of care is used, in which the first step is usual primary care, and the second step is the addition of a psychiatrist or psychologist. The third step involves care of the small subgroup of patients who were refractory (ie, the 25% who were still ill in the studies) who may require more intensive psychotherapy or medications in a specialty clinic.

Sixty-five percent of the primary care physicians surveyed after the trial indicated that the intervention had greatly increased their satisfaction and skills in treating depression. All preferred the on-site program, in which mental health professionals were integrated into the clinic compared with referral to specialty care, which was the usual practice. In general, only 50% of patients who are referred to outside mental healthcare actually make their first visit; a rate that is higher among patients who have experienced previous mental healthcare (70% to 80%) and considerably lower (30% to 40%) among patients who are inexperienced with mental healthcare.

Effect of Collaborative Care on Costs

Data from these 2 randomized, controlled trials were used to estimate treatment costs, cost effectiveness, and potential cost offsets of providing collaborative care services in the primary care clinic during the first year after diagnosis.⁴ The costs of providing collaborative care depression treatments were compared with the costs of the usual management of depression. Dr. Katon cautioned that cost offsets for patients with recognized depression were likely to have less impact than those for patients who were not recognized as having depression. The analysis was conducted only for patients with major depression, because the intervention did not improve effectiveness in minor depression.

Costs for primary care visits and antidepressant medication were higher for the intervention group because of improved compliance in this group (Table 4). Costs for enhanced medication compliance and the intervention visits with a psychologist or psychiatrist added about \$400 to the usual cost of care compared with costs for the control group, which did not receive the special intervention.

Table 4. One-Year Ambulatory Mental Health and Healthcare Costs for Psychiatrist-Primary Care Model Versus Usual Care for Major Depressives Only

	Intervention (n = 41)	Control (n = 33)
Depression treatment costs	US \$	US \$
Primary care visits	404	327
Antidepressant medications	394	239
Specialty mental health outpatient services	120	284
Intervention visits	418	0
Total depression treatment costs	1336	850
Cost difference	+486	
Ambulatory medical services	1428	1593
Total ambulatory costs	2764	2443

Source: Reference 4.

Therefore, the costs for depression care alone were \$486 higher in the intervention group. This gap narrowed to about \$300 when costs for all ambulatory medical services were considered because of some cost offsets ([1337+1428] minus [1593+850]). When the total ambulatory care costs were examined for 1 year, a considerably higher number of patients improved as a result of the intervention for a cost of approximately \$300 more per person. The infrequency of hospitalizations did not permit evaluation of inpatient costs.

Overall, there was little evidence of a cost offset, although there was one in a specific component of care: the reduced use of specialty mental health services (outside the primary care clinic) among those in the intervention group. Dr. Katon noted that because the patients in this study were mostly healthy, middle-age people rather than elderly, the study population may not have been the best in which to demonstrate a cost offset.

Cost effectiveness is a measure of the value of care and is expressed as health improvements per dollar spent on care; the cost-effectiveness ratio serves as a yardstick for prioritizing health interventions that compete for limited resources. For the treatment of depression, cost effectiveness was defined as the ratio of the cost of the intervention to the proportion of patients successfully treated (50% or greater reduction in severity). The cost effectiveness for collaborative care (\$1797) was better than that for usual care (\$1941), because although the costs for usual care were lower, only 40% of patients showed improvement (Table 5).

Marginal, or incremental, cost effectiveness is a more typical way of comparing interventions and shows the incremental cost effectiveness of adding the intervention to usual care, Dr. Katon stated. (It was calculated as [the cost of the intervention minus the cost of usual care] divided by [the

effect of intervention minus the effect of usual care].) The incremental cost effectiveness was \$1591 per patient, an improvement of more than 50% (Table 5). In other words, the incremental cost of successfully treating one primary care patient was substantially lower using collaborative care than the cost of usual primary care (\$1941). "This makes collaborative care a high-value strategy, despite being associated with slightly higher costs up front because significantly more people are getting better, and it compares very well with usual care in terms of cost effectiveness," stated Dr. Katon.

Conclusion

The cost of intervention was higher than that of usual care, and there was little evidence of a cost offset. However, the cost of successfully treating one case of major depression was lower with the intervention, and the incremental costs of collaborative care were substantially lower than the usual primary care costs to successfully treat one primary care patient.

These new models, in which mental health interventionists are inte-

Table 5. Cost Effectiveness and Incremental Cost Effectiveness for Psychiatrist-Primary Care Model and Usual Care for Major Depressives Only

	Intervention (n = 41)	Control (n = 33)
Cost per patient treated (\$)	1336	850
Proportion successfully treated	0.744	0.438
Cost effectiveness (\$ per patient improved ≥50%)	1797	1941
Incremental cost effectiveness	1591	NA

NA = Not applicable.
Source: Reference 4.

grated into the primary care practice, work well in large practices and more organized care. Because of the expense associated with the mental health intervention, integration may be more problematic in small practices, and other models of care may need to be developed.

...DISCUSSION HIGHLIGHTS ...

Collaborative Model

Dr. Klinkman: Did you look at admissions for chronic illnesses other than mental health for which care might have improved?

Dr. Katon: We did, but we did not have the power to show differences with a group of only 80 people; a much larger population is needed. This is a mixed-age population with a mean age of about 40, so there are very few medical hospitalizations. It is probably very different in the elderly. A study like this in the elderly might have much more impact because there would be more hospitalizations.

Dr. Wilson: Are these statistically significant differences?

Dr. Katon: No. When you look at costs, the standard deviations tend to be twice the levels of the mean. With such high standard deviations, large populations are needed to actually show differences. We were very underpowered statistically even to run a test. A problem with most intervention studies is that they are underpowered to look at significant differences in medical costs, especially inpatient costs.

In terms of a cost offset, we were not able to show that the provision of mental health services led to a decrease in costs. There was a significant cost offset in specialty mental health in this study, but overall, we showed little evidence of a cost offset.

This may not be the best population in which to show that, given that it is mostly healthy and middle aged, rather than an older population with more comorbidities.

Dr. Vaccaro: Is it accurate to say your specialty mental health costs are lower in your intervention model?

Dr. Katon: There are 2 types of mental health costs. One is the cost of the intervention, which usually involves at least an extra visit with the primary care doctor and a couple of visits with the psychiatrist, which cost about \$400. Then there are the costs for mental health specialists outside of the clinic. There is a significant cost offset in the use of these services. You go from about \$120 to \$284 in interventions versus controls, so you save money in outside specialty mental health costs by integrating the specialist. You decrease the number of people referred to a specialty mental health clinic that is outside the primary care clinic, so you save money there, which is one of the things that cuts that \$486 down to about \$300.

Dr. Vaccaro: You are saying when you take out the locus issue and look only at the specialists involved, you are saving money on psychiatrists or psychologists.

Dr. Choksi: How about the quality of life?

Dr. Katon: We have another published paper on some of the quality-of-life and disability measures,⁵ and on some specific disability measures on which the intervention patients have shown significant improvements compared with controls on items like general health perception. If you ask these people about their health, people who have had the intervention are more likely to say they have an improved perception of health. If you look at some somatic symptom scales

we use, the intervention patients have less physical symptoms over time compared with the controls.

On other measures, we were underpowered to show a difference. We had some measures of disability days away from work, which has the same problems as costs, that is, the standard deviations are about 3 times higher than the means for disability days. You need populations of about 400 or 500 people to be able to show intervention versus control differences.

The general health perception scale findings were interesting because in geriatric patients researchers have found that a poor perception of health is associated with higher medical costs over the next year and is predictive of mortality rates.

Dr. Vaccaro: In this area, do you use terms like cost offset versus cost of effective treatment?

Dr. Katon: One of the problems in the mental health area is that psychiatrists and psychologists have felt for years that they have to show a cost offset for anybody to pay for it. No other medical field ever uses that criterion, except maybe for long-term projections.

The question nowadays in the literature is not so much what the intervention costs but what do you get from it. That is cost effectiveness, which is the measure of the value of care in terms of the health improvements per dollar spent. The cost-effectiveness ratio serves as the yardstick for measuring the relevant priority of health interventions. That is how new technologies are studied and compared with existing treatments.

On the other hand, in psychiatry we have felt the need to show a cost offset. The trouble is that most studies that showed a cost offset are 10 or 20 years old and came in the era before managed care. Most show that the true cost savings were inpatient costs, but few people are being hospi-

talized anymore. I think among subgroups like geriatric patients or those with very significant comorbidities, we might find a cost offset, but in the average middle-age, depressive patient you are not likely to find it nowadays.

Dr. Wilson: You mentioned that these are average depressed patients. Have you any idea how some of this might apply to the more severe end of the spectrum, especially specific models of cost-effective treatment for delusional, depressed, or bipolar patients?

Dr. Katon: Some of the models we are testing are now being used. There's a good study on bipolar patients that was just published in *The British Medical Journal*,⁶ where the researchers essentially worked with patients to educate them about early symptoms and prodromal symptoms. They were able to show decreased rates of manic episodes but not of depressive episodes among manic-depressives over a 2-year period. I also believe they had fewer hospitalizations. Some other models with more severely ill patients also show cost savings.

Dr. Wilson: Historically, we have assumed that a small percentage of severely ill people generate most of the costs.

Dr. Katon: Yes. We have shown that in the medical setting 10% of the people account for roughly 35% or 40% of the costs over the course of a year compared with the rest of the population. Psychiatric illness among those high utilizers was dramatically higher than in the rest of the population, so there is a cost to this. In randomized trials, attempting to show a cost offset is very difficult. So, this is probably not the best study to show that in because we are picking up the patients who the doctor has probably stopped testing because it is now recognized that

they have depression. A lot of these patients already had medical workups to rule out depression before we got to them.

Other Models of Care

Dr. Nichol: You said you monitored the adherence to both the intervention and the control in both models. Did you consider an arm in which you monitored only the adherence and sent reminders to see whether there were differences associated with that?

Dr. Katon: No. We are testing some newer models now. We have a pharmacist-assisted model that we are testing in one of our primary care clinics, in which the pharmacist has some in-person visits and subsequent telephone visits with a patient to try to improve adherence to medication. The pharmacist will also be tracking outcomes like the psychologist did and will be supervised by a psychiatrist. This is a very large clinic where we actually have a clinical pharmacist. We also have another ongoing study that will be using a nurse assistant model. We're testing pharmacists and nurses who are also supervised by psychiatrists, much as we did in the second trial.

At a recent conference in Seattle, 3 studies were presented with nurse interventionists who did not have much link to psychiatry. They experienced significant improvement in outcomes, but it was only about half as robust as the 2 models I presented here. I think such outcomes could be improved if the nurse actually has better supervision from a psychiatrist.

Dr. Vaccaro: The core of your model is what's attractive, and I think the solution in the rest of our markets will be to create virtual systems, as you have described here. At PacifiCare, we're doing exactly that, by telephone for the most part, and then through the use of information technology. We

are putting together a system of care such as you have described.

Dr. Katon: IVR [Interactive Voice Response] systems are now being used, in which a patient dials a telephone number and actually fills out a depression questionnaire on the phone, so you can actually tell whether there has been improvement over time. Ideally, that should be done at the point of treatment and 8 weeks later. The big issue is how to track outcomes and do something about people who aren't getting better. How that is done will vary in different care models.

We have just completed a large study in which we monitored outcomes for depression in 4 Group Health clinics. From a population of 88,000 patients, we followed about 2000 who were started on an antidepressant in primary care over the course of about 18 months, and we tracked the outcome. At 8 weeks, we interviewed the patients. If they had 4 or more symptoms, they were randomized to a collaborative care model versus usual care; we call it step treatment. The first step was diagnosis and treatment by a primary care physician. As the second step, we randomized patients to the collaborative model and found very similar results. By using the 8-week monitoring and only entering into the trial patients who were still sick at 8 weeks, we may be able to improve the cost effectiveness, because these are patients who are going to stay chronically ill in usual care. We can show improved outcomes in that model as well.

Another big issue for primary care systems is: What about the 25% of people who don't get better with this very brief mental health treatment? Who is going to pay for that, and what can we do for these folks? They often have psychiatric comorbidities and tend to have multiple other axis II disorders as well as family problems. There are more complex depressives

who are always part of a depression trial and they often don't improve either with medication or psychotherapy alone. Such patients may need combined treatments.

Dr. Jack: Was there any active screening?

Dr. Katon: No. In Group Health, researchers have shown that primary care doctors pick up about 65% of the major depressives accurately, so it is a better system than some. Researchers have also shown in Group Health that those who are not picked up usually have a Hamilton depression scale score of less than 13, so the major depressives who are not picked up are mildly ill and have very little disability.

There is a very significant effect of the intervention on the slope; in other words, the people in the intervention get better faster and more completely over time. Then we looked at a 50% or greater reduction. What we did not do was to look at a cure, although we've done this in the newer trials.

Economic Considerations

Dr. Jack: Do you anticipate any sort of cost ramifications as a result?

Dr. Katon: The more completely you get people better, the less likely they are to continue to have multiple healthcare visits. The data show that the more depressive symptoms a patient has, the more care is used. Dr. Rabins demonstrated with the elderly that minor depressives use more care than patients who are not depressed when you control for chronic medical illness, and major depressives use even more care. Theoretically, the more completely you get people better the more their care ought to resemble that for people without depression. So we ought to be looking for a cure. In efficacy trials with patients who have depression, maybe

40% or 50% reach the cure range. Thus even in efficacy trials in which patients are followed weekly for 10 visits in 12 weeks, not all get cured.

Dr. Rabins: If followed longitudinally, wouldn't some of the minor depressives probably have presented with major depression at some point?

Dr. Katon: Absolutely. Some of them have also had major depression in the past. One of the tricky things with minor depression is that much of it is an adjustment disorder that gets better. Some minor depression arises from early disorders that go on to major depression, and some of it is really dysthymia. So there is quite a mixture of patients in this minor depression group.

A study by Wells and associates⁷ showed that among patients with minor depression who were picked up in the Medical Outcomes Study, about 25% developed major depression over a 2-year period, which is a much higher rate than what you would find in the general population.

Dr. Treisman: I guess my concern centers on the suggestion that there might be savings on medications for that group.

Dr. Katon: We don't have studies that show that if you randomize minor depressives to an SSRI [selective serotonin reuptake inhibitor] versus a placebo, the SSRIs have a bigger impact than a placebo. The few studies that have examined this issue have suggested very high placebo response rates. Our study certainly suggests that a few visits with the family physician and low dosages of antidepressant treatment result in improvement in 65% or 70% of those people. However, the other 20% or 25% of patients may need other care, and they are the ones primary care physicians might consider following, with the recognition that such patients

may be at higher risk of major depression. On the other hand, those patients may not need treatment right away. If you actually follow the way primary care physicians treat a lot of people, much of it is watchful waiting. There may be other interventions they would try before they added a medication for those who are not getting better or are getting worse. Therefore, there are ways to set up the algorithm so you don't lose those who really are going to get worse or develop an episode.

Dr. Choksi: Your presentation of incremental cost effectiveness is really interesting. In Florida, we have more solo practitioners and a lot of carveouts from MCOs [managed care organizations] to MBHOs [managed behavioral health organizations]. Obviously, the financial consideration is separate. Do you have any suggestions on how to measure or implement an investigation of cost effectiveness?

Dr. Katon: There are 2 challenges you've brought up regarding Florida. One is smaller practices among primary care physicians, and the other is that behavioral health and primary care are separate entities. Even in those separate entities, most people who run managed care practices will tell you they are trying to do some things to integrate them with primary care more fully. Again, tracking outcomes and adding resources for people who are not getting better or who have had bad outcomes could be done in your type of model as well. It may require IVR or some type of technology other than a telephone call.⁸ We are moving toward automated systems that will allow us to do that more effectively.

The IVR technology is being used more frequently. It can be used for migraine headaches or depression or other illnesses for which we don't have a blood test to measure a

patient's progress. In the future, this technology will probably be used at least to monitor outcomes and alert the physician about a patient who isn't doing well.

The trouble is that patients who are not doing well may not show up for months at a time, so the physician doesn't really know how they are doing. The patients who stick with a physician and keep coming back get well. When we look at data for all illnesses, whether we are specialists or primary care doctors, we find a lot of people are not doing well because they have dropped out or are sporadic or ambivalent about treatment. We just don't see those patients as frequently.

Dr. Klinkman: One of the critical advantages of the managed care approach is that you change your thinking from caring only for the patient who comes into the office to caring for a group of patients for whom you share a responsibility with the subspecialty team with which you work.

Economic Models

Dr. Katon: I think you have to switch the economic models. The economic model in carveout mental healthcare is: If I see more patients and have an increased number of visits, I make less money. You're going to see fewer patients for less time or visits. The economic model we need to switch to is: We pay you more for better outcomes. That switches the priorities and the incentives.

I also think our economic models are not well set up. My criticism of managed mental healthcare is that there is an incentive to shift the cost back to primary care. There is an incentive to do less because you make more, but what that means to primary clinicians is their patients are not going to get as well, and they are going to visit the practice more because depression is associated with

more visits. As a result, primary care physicians often don't like managed care carveouts because they are often tied in with a lack of choice in referrals and a lack of communication, which puts the onus of treatment on them. This approach costs primary care practices more because mental health carveouts, which provide limited care with no checks on quality, may result in fewer patients getting better and these patients are then likely to use more primary care. Rather than having an integration of care, we have this craziness in America of separate organizations paying for mental health and primary care.

Even in Group Health, which theoretically is one organization, they initially wouldn't let primary care physicians use SSRIs as first-line treatment; that has changed now. Simon and associates⁹ did a study in which patients with depression were randomized to an SSRI or a tricyclic by the primary care physician. The study showed that although there were savings on pharmacy costs with tricyclics, primary care costs and many other healthcare costs increased.⁹ But the increased SSRI costs were coming out of the pharmacy director's budget, so they actually had to deal with this as a system, because otherwise the pharmacy director was going to have to fire some personnel to pay for the SSRIs. So people should look at overall costs, which often doesn't happen unless you really have good systems.

Dr. Cohen: What's interesting is the change in the budgeting paradigm that gives each medical department its own budget. This concept may become an issue if your department can only incur a fixed amount of drug costs per year and you go over that amount. How do you justify that? Will such a concept compromise the quality of care while it holds the individual medical department responsible for its own drug costs?

Dr. Katon: In Group Health, one sixth of the whole pharmacy budget, which includes cancer drugs, antihypertensives, and H₂ blockers, goes for SSRIs. So pharmacy directors' concern is that they are going to have to fire personnel to pay for that, unless costs can be recouped or shifted elsewhere.

Dr. Klinkman: How do the costs change when dealing with this chronic illness on a long-term basis? Will efficacy remain what it is? Will the effectiveness of treatment be the same?

Dr. Katon: Depression is like asthma; it's a relapsing, remitting illness in 60% to 70% of people, and in 20% it is chronic. The costs don't go away. There are almost no depression studies done in primary care. The initial study in Pittsburgh¹⁰ was actually an efficacy one, in which patients were followed very intensively—once a month for 2 to 5 years. Such a frequency of visits will never happen in an effectiveness study.

We have an ongoing relapse prevention study in which patients with recurrent or chronic major depression are randomized to an intervention or to usual care after they improve in primary care. The intervention consists of patient education about staying on medications for 2 years, tracking, and helping patients understand early prodromal symptoms so they can come in sooner. Patients receive 2 visits in the first month of maintenance treatment and then phone monitoring every 2 to 3 months.

There is really a need for more of these longer-term maintenance or relapse prevention studies based in primary care. That is the first longer-term study in primary care that has been funded by the NIMH [National Institute of Mental Health], although many studies have been funded in specialty care. In the United States, we love short-term outcomes; nobody

ever really wants to look at what's happening in 5 years because in some ways nobody cares.

The other criticism I have of the medical system is that if you run a system where 50% of patients are disenrolling every year, where is the incentive to improve the care of those with diabetes or depression when they are not going to be around next year? Patients may follow their primary care physician through several plans. But where is the incentive for a new plan to help patients with chronic care, especially if it's not going to save money this year but it might next year or in 5 years?

Dr. Nichol: To address long-term costs, you've got to be able to track a large number of patients over a long time period with a system that measures costs, and there are just not a lot of those out there. The disenrollment rates make longer-term studies very difficult.

Dr. Katon: Doing those kinds of studies in a randomized trial is very expensive for such large numbers of patients.

Dr. Nichol: Absolutely. So we're faced with looking at things from a retrospective standpoint, which gets into problems with the retrospective approach in terms of limitations on what we really know about the populations within each of the categories we might have. As a result, you start making inferences from the data available, but you have to be careful with that.

Patient-Physician Relationship

Dr. Treisman: The other side of that very issue is: What is the real cost in terms of cost effectiveness of having the primary care physician be the one the patient knows long term? How do you demonstrate the value of a physician's relationship with a patient? It

is very hard to measure the value of knowing the patient, and this very seldom becomes explicit. You measure the things you can.

We have a fairly long study of patients with depression in the AIDS [acquired immune deficiency syndrome] clinic, and we have found that unlike other studies, we could show an 85% improvement rate and a 50% return to baseline if we tracked out 17 months. With a 17-month study of about 125 patients, we were able to show incrementally better numbers every time we looked at the data. We saw a steady improvement in the depression measures of refractory patients as time went by and they continued to get new medication trials. You're still incrementally getting a few people better, and I think showing that in this kind of a model is very hard.

Dr. Nichol: We have been looking at the value of the provider-patient relationship over 3 or 4 years in about 5 different disease states, but we've done it more from the standpoint of looking at pharmacy, mainly because that is an area we can measure. On a number of our retrospective studies, we have included a variable that indicates whether the individual filled all of his or her prescriptions at a single pharmacy. Interestingly, we have found in 4 of the 5 disease states we've looked at, there is a cost savings that is really substantial—from \$600 to \$1200 in a 1-year period. The difficulty is: What are you really measuring? Are you measuring a relationship between the pharmacist and the patient, or are you measuring something about patients who fill prescriptions at a single pharmacy?

Dr. Katon: Are such people really more stable than those who go to numerous pharmacies?

Dr. Nichol: Exactly. So we've got those questions. What is dramatic is

that the effect persists, even when we go through a sensitivity analysis to try and eliminate it. I think there is an issue there with regard to relationships that requires more work.

Dr. Klinkman: It is very hard to figure out that value because it lies precisely in integration rather than in looking at it in isolation. One group has tried to measure it by direct observation in primary care. Kurt Stange, MD led a team who sat in on thousands of patient-physician encounters to code specific patient-physician interactions during visits.¹¹ Primary care clinicians have varying strategies for trying to figure out which issues come to the fore and which need to be addressed as being the highest priority for an individual patient. That is probably the only way to get a sense of a relative long-term value. It may be that dealing with depression doesn't provide the highest return on that investment. Instead, maybe dealing with diabetes for 3 months does. But you won't know that if you are only measuring diabetes outcomes or depression outcomes.

Dr. Treisman: In a broader sense, if I want a managed care organization to invest resources in a significant way in the retention of a population of providers so that patients can over 5 to 10 years develop a relationship with their provider, how do I measure that relationship? It's very hard to gauge.

Dr. Klinkman: We tried to measure that a few years ago. In Cleveland, we had a large influx and outflow of patients as health plans changed. We figured that even when we were dealing with a relatively healthy population of young and middle-age adults, it was a 6- to 9-month process before we broke even, because when somebody came into our system, no matter how much and how carefully the records were transferred, we still

redid a lot of work. It takes a long time before you recoup the investment you make on a new patient in a capitated system. We never went beyond the first year. We figured we broke even, but if a patient left in a year's time, that wasn't optimum care from our perspective; it was very costly. We knew they got better, but we

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—Michael S. Klinkman, MD

didn't know whether it reached some asymptote beyond which it didn't improve. It was a great study but a long one to undertake.

Dr. Treisman: That is also a very tough study to do. If you're a corporate manager and you're looking at this quarter's expenses and you have physicians who have been in practice for a while and have a reputation in the community, they are more expensive than a group of clinicians who are starting out. The question is: Is a unit patient visit any kind of measurement of what happens between a patient and a physician?

Dr. Klinkman: We have some specific data from a long-term depression project that detection and treatment were much more likely to occur if the physician and the patient knew each other. If the index visit was a short one with a clinician the patient didn't

know, detection almost never occurred with those who had a major depressive disorder. So we know some of the shortcuts that sometimes work, but the data are cross-sectional not longitudinal; we haven't done the longitudinal study.

Maintenance Models

Dr. Rabins: You mentioned this long-term study. If someone gets better, what are some of the models that will maintain that improvement?

Dr. Katon: It's a challenge because it is an effectiveness trial. The specialty-based efficacy trials that have looked at maintenance treatment are very intensive. They require good, acute-phase treatment, which is usually 10 visits in 12 weeks. The trials then require that patients be asymptomatic for 3 to 4 months, after which they get randomized to placebo or medication. Then, patients make monthly visits for 2 to 5 years.

If I try to randomize patients in primary care to that protocol, it is not feasible. What we have come up with is a model in which we track outcomes. We have shown in our previous epidemiologic work that there are 3 risk factors for recurrence of depression in primary care: residual symptoms after the patient gets better, dysthymia plus major depression, and 3 or more episodes. Those who are started on antidepressants by the physician are largely better at 8 weeks. If they have any of those risk factors, they are then randomized to usual care versus an intervention.

The intervention we have developed is one that is largely psychoeducational and is delivered by 3 levels of professionals. The recurrent nature of depression is stressed, and patients are informed that given their epidemiologic history, if they stop medication over the next 2 years they have an 80% risk of relapse.¹²

We also educate them about early prodromal symptoms, that is, the first signs of a relapse, and we try to get them to call. We didn't have IVR technology at that time so we would send them a Beck questionnaire every 2 1/2 to 3 months, which they fill out and send back. We then send them a graph of their Beck scores over time. If the Beck score goes up, a depression specialist gives them a call. In addition, there are 2 visits up front followed by about 4 phone calls over the course of the year. We're comparing that approach to usual care; it's a brief intervention. We've used a nurse, a social worker, and a psychologist, each of whom gets supervision by a psychiatrist in terms of tracking symptoms over time.

Dr. Treisman: So you're focusing on educating patients. Have you done any interventions with clinicians?

Dr. Katon: We show the clinicians the guidelines. The interventionists talk to the primary care physician since this is being done within the primary care clinic. At the end of their 2 in-person visits, they give the doctor a form that goes in the chart, which indicates the pharmacologic regimen and makes treatment recommendations. They also list any additional chronic stressors the patient has, for example, "Patient's husband is a drinker," and recommends that the physician keep trying to get the patient, in this case, to go to Alcoholics Anonymous. The interventionists recommend to the physician not only what he or she ought to do pharmacologically but also in regard to psychosocial interventions. The same form goes to the patient at the end of the 2 visits. We also track prescription refills by automated data.

Dr. Vaccaro: I would like to raise a question about the availability of effective psychotherapies. Basically, there are at least 2 specific types of

talk therapies, CBT [cognitive behavioral therapy] and IPT [interpersonal psychotherapy] that have been shown to be effective in the treatment of depression. I think if you ask providers the kind of psychotherapy they plan to do with this depressed patient, most will say CBT or IPT, but very few actually do it. For example, when we've looked at proxies for CBT, we found that fewer than 5% to 10% of practitioners actually had any record of engaging in that practice. We've now embarked on an effort to aggressively train providers and then certify them by subspecialty as being conversant with CBT, IPT, and other therapies. Trying to follow treatment guidelines is good, but if the treatment guideline requires CBT and practitioners do not know how to provide it, the guideline is meaningless.

Impact on the Family

Dr. Wilson: Do you have any systematic data, either in terms of symptoms or costs, associated with the family members of these patients?

Dr. Katon: No. In some of our newer trials, we're starting to ask about the cost to the family in terms of having to take the patient to the doctor and take time off work, but we didn't have such questions built in. It gets back to costs; there are costs to patients and their families, then there is the cost to the employer—mainly disability days and decreased productivity—and cost to the medical system. All of these costs are different.

In our newer trials, we are trying to get measures of all those costs built in. However, there aren't enough good, valid measures in these areas, and some of the measures like disability days off work have such a high variability that one needs great numbers of patients to actually show effects. But again, the newer trials are trying to take a much broader view of costs than the efficacy trials, which only looked at symptoms. Disability measures are

common now, and we're starting to add better cost measures. We're also starting to think about the burden and the cost to the family, which may be the biggest issue in depression.

Dr. Wilson: Was there any education or intervention with family members?

Dr. Katon: They are asked to view the videotape with their spouse. Ken Wells, MD of UCLA has some fascinating data from his study which suggests that people who get better treatment for depression are more likely to remain employed 1 year later compared with patients in usual primary care [unpublished data]. Dr. Wells has data on 700 to 1000 people, so his study is large enough to look at that. We hope that those kinds of data will start to influence employers as well. Those of us who treat depressed patients know there is a tremendous maladaptive effect on their work and their family. Even if they don't miss work, people simply don't produce when they are that depressed, and certainly, the burden on their spouse and children is very high. Again, how do you measure that effectively? It is a crucial issue for future studies.

Dr. Wilson: I think family members are often a real asset in treatment.

Dr. Katon: They can be a liability or an asset, but we ought to be cognizant that trying to enlist them as allies is important. I do that in the care of my private patients by trying to get the spouse in on the second or third visit to gauge whether he or she is an ally or a hindrance. I try to get the spouse on my side and hopefully on the patient's side as well. I think we don't do that enough.

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