Dobscha SK, Corson K, et al. Collaborative Care for Chronic Pain in Primary Care. JAMA 2009;301(12):1242-1252.

Design: Cluster randomized trial

Population/sample size/setting:

- 42 clinicians (30 physicians, 12 nurse practitioners or physician assistants; 21 women, 21 men) treating patients in the VA system in Portland, OR
- The 46 clinicians were the primary care providers for 401 patients (368 men, 33 women, mean age 61) who enrolled in a study of collaborative care, and were recruited with mailings and posters placed in and around the VA facility
- Clinician eligibility was open to any full-time or part-time staff physicians, physician assistants, and nurse practitioners who treated patients in the primary care clinics of the Portland VA
- Patient eligibility required documentation of a musculoskeletal pain diagnosis of at least 12 weeks duration, scores of 4 or higher on both pain intensity and pain interference subscales of a 10 point Chronic Pain Grade instrument, and scores of 6 or greater on the Roland Disability scale (0-24, with higher scores equaling higher disability)
- Patient exclusion was based on diagnoses of fibromyalgia, chronic fatigue syndrome, somatization disorder, bipolar or psychotic disorder, dementia, or terminal illness

Main outcome measures:

- Randomization was done on the clinicians, to either manage their patients with usual care (n=22) or to a collaborative care model involving assistance with treatment intervention (n=22)
- The randomization of clinicians led to an allocation of patients into either usual care (n=214) or to the collaborative care model (n=187)
- The collaborative care model entailed an intervention team whose key members were a psychologist care manager and an internist who spends at least 1 day per week in the VA's largest primary care clinic
- The collaborative care model key elements were patient and clinician education and activation, ongoing monitoring of symptoms, and expert decision support for primary care clinicians
- Each clinician in the collaborative care model participated in two 90-minute workshops led by the intervention team, introducing education about chronic pain and shared decision-making skills
- Collaborative care included identification of fear-avoidance beliefs, exploration of treatment barriers, screening for comorbid psychiatric disorders, and setting individualized functional goals
- Collaborative care patients were invited to attend a 4-session workshop led by the care manager and co-led by the internist or a physical therapist
- The care manager contacted the patient by telephone every 2 months over a 12-month period to re-administer pain, depression, and substance use screenings, to assess goals, and provide support

- Usual care consisted of access to the specially pain clinic, with ancillary services including physical, occupational, and recreational health services
- Patient data was gathered by research assistants blinded to the group assignment at baseline and at 3, 6, and 12 months
- The primary study outcome was the Roland Disability score over 12 months; additional primary outcomes were depression severity and pain intensity
- On the primary outcomes, some improvements from baseline were observed in both groups; however, the rate of improvement was greater in the collaborative care group than in the usual care group
    - The Roland Disability score decreases an average of 1.4 points in the collaborative care group and by a non-significant 0.2 points in the usual care group; the minimal clinically important difference is 2 points for populations with high rates of chronicity
    - Chronic pain intensity (re-scaled on a scale from 0-100) decreased by an average of 4.7 points in the collaborative care group and by 0.6 points in the usual care group
    - Depression scores, based on the PHQ-9 (scale from 0 to 27, where 27 is extremely severe depression), decreased by an average of 3.7 points in the collaborative care group and by 1.2 points in the usual care group
    - A 30% reduction in the Roland Disability score at 12 months was seen in 21.9% of collaborative care patients and in 14% of usual care patients
    - Patients in the collaborative care group were more likely than usual care patients to be prescribed antidepressants (53% vs. 39%), NSAID (62% vs. 39%), and capsaicin (44% vs. 5%); they were also more likely to have physical therapy appointments (48% vs. 16%)
    - Global treatment satisfaction and quality of life measured by the EQ-5D did not differ between groups

Authors' conclusions:

- Collaborative care intervention for chronic pain was significantly more effective than treatment as usual across a variety of outcome measures
- The changes were modest, but may be especially meaningful in patients who were older, had long-standing pain, high levels of baseline disability, and multiple medical problems
- Lack of statistical difference in global satisfaction and quality of life may have been due to low power, or due to low sensitivity to change of the EQ-5D
- The patients volunteered for the study; the interventions may not have been as effective in a non-volunteer (and less motivated) patient population

Comments:

- The small changes in disability and pain were attributed in part by the authors to multiple medical problems; however, it is precisely in these patients that an advantage of multidisciplinary care might be expected to be seen; patients with only a single problem could be adequately managed by a single specialist

- Because the collaborative care intervention takes place at the level of a health care provider practice, individual randomization would not be appropriate (the clinician would tend to apply the collaborative care information to patients who were randomized to usual care), a cluster trial is the design of choice
- The control of bias in cluster trials presents issues distinct from those in which the unit of analysis is the individual patient
    - Sample size calculations must take into account the intracluster correlation coefficient (within-group correlation of outcomes); this was done by the authors, who assumed an ICC of 0.02, which may be reasonable, but the ICC in their study was not reported
    - Because imbalance between groups at baseline is likely to arise, measures to control this imbalance (matching, stratification) are important; the authors stratified the sample by professional training, distance from the main hospital, and proportion of patients in the practice currently receiving opioids
    - If outcomes are measured at the individual patient level (rather than at the cluster level), analyses need to adjust for clustering in the data; the authors used a multilevel statistical model to analyze their data
- Therefore, the authors took reasonable measures to control bias

Assessment: Adequate for evidence that multidisciplinary management of chronic pain may improve pain and function in patients (methodologically of sound quality, but the small effect size means that the effectiveness of the intervention is uncertain)