

Outpatient Chronic Disease Management

Anderson, G. F., & Chalkidou, K. (2008). Spending on medical care: More is better? *JAMA : The Journal of the American Medical Association*, 299(20), 2444-2445. doi:10.1001/jama.299.20.2444

This article discusses a number of studies which consistently have found that there is little correlation between healthcare spending and outcomes.

Bodenheimer, T., Wagner, E. H., & Grumbach, K. (2002). Improving primary care for patients with chronic illness. *JAMA : The Journal of the American Medical Association*, 288(14), 1775-1779.

The chronic care model is a guide to higher-quality chronic illness management within primary care. The model predicts that improvement in its 6 interrelated components—self-management support, clinical information systems, delivery system redesign, decision support, health care organization, and community resources—can produce system reform in which informed, activated patients interact with prepared, proactive practice teams. Case studies are provided describing how components of the chronic care model have been implemented in the primary care practices of 4 health care organizations.

Calvin, J. E. (2007). Improving outpatient care in chronic cardiac disease: No easy solutions. (comment). *American Heart Journal*, 151(1), 1-1-3.

This editorial discusses the focus of quality improvement methods in cardiology and the current aims of quality healthcare delivery systems.

Casalino, L. P. (2005). Disease management and the organization of physician practice. *The Journal of the American Medical Association*, 293(4), 485-485-488.

What physicians do for patients with chronic disease and what they should do vary greatly. Disease management and the chronic care model are two models used to address this "quality chasm" in outpatient care. The Center for Medicare and Medicaid Services (CMS) will begin an initiative to address this problem by bringing to light the two models to make an impact on physician practice and patient care.

Clar, C., Waugh, N., & Thomas, S. (2007). Routine hospital admission versus out-patient or home care in children at diagnosis of type 1 diabetes mellitus. *Cochrane Database of Systematic Reviews (Online)*, (2)(2), CD004099. doi:10.1002/14651858.CD004099.pub2

This study was designed to assess the effects of routine hospital admission compared to outpatient or home-based management of children newly diagnosed with type 1 diabetes mellitus. The authors searched The Cochrane Library, MEDLINE, EMBASE, CINAHL, and the British Nursing Index, as well as reference lists of relevant studies identified and contacted one of the trialists about further studies. Studies were chosen that compared initial hospitalisation to home-based and/or out-patient management in children with newly diagnosed type 1 diabetes. Seven studies were included in the review. The one high quality trial identified suggested that home-based management of children with newly diagnosed type 1 diabetes may lead to slightly improved long term metabolic control (at two and three years follow-up). No differences between comparison groups were found in any of the psychosocial and behavioural variables assessed or in rates of acute diabetic complications within two years. Parental costs were found to be decreased, while health system costs were increased, leaving total social costs virtually unchanged. None of the other studies assessing metabolic control found a difference between the comparison groups. There seemed to be no differences in hospitalisations or acute diabetic complications between the out-patient/home groups and the hospital groups. The authors conclude that due to the generally low quality or limited applicability of the studies identified, the results of this review are inconclusive. On the whole, the data seem to suggest that where adequate out-patient/home management of type 1 diabetes in children at diagnosis can be provided, this does not lead to any disadvantages in terms of metabolic control, acute diabetic complications and hospitalisations, psychosocial variables and behaviour, or total costs.

Dobscha, S. K., Corson, K., Hickam, D. H., Perrin, N. A., Kraemer, D. F., & Gerrity, M. S. (2006). Depression decision support in primary care: A cluster randomized trial. *Annals of Internal Medicine*, 145(7), 477-477-487.

This article discusses a clinician-level, randomized controlled trial that analyzes the effect of a depression decision support team on individuals' depression scores and health-related quality of life. The depression decision support team consisted of a psychiatrist and a nurse. The decision support team did not improve the depression outcomes any greater than the control group.

Early Supported Discharge Trialists. (2005). Services for reducing duration of hospital care for acute stroke patients. *Cochrane Database of Systematic Reviews (Online)*, (2)(2), CD000443. doi:10.1002/14651858.CD000443.pub2

Following a stroke, patients conventionally receive a substantial part of their rehabilitation in the hospital. Services have been developed which allow patients to be discharged earlier and receive rehabilitation therapy at home (early supported discharge or ESD). This study was designed to establish effects and costs of ESD when compared to conventional services. The authors searched the Cochrane Stroke Group's trials register (last searched August 2004) and obtained further information from individual trialists. Selection criteria included randomised controlled trials recruiting stroke patients in hospital to receive either conventional care or any service intervention which has provided rehabilitation and support in a community setting with an aim of reducing the duration of hospital care. Two reviewers categorized the trials based on eligibility and individual patient data was then sought from the individual trialists. Outcome data were available for 11 trials, including 1597 patients. The ESD group showed significant reductions in the length of hospital stay, equivalent to approximately 8 days. The greatest benefits were seen in the trials evaluating a coordinated ESD team and in stroke patients with mild-moderate disability. Improvements were also seen in patients' extended activities of daily living scores and satisfaction with services. However no statistically significant differences were seen in carers' subjective health status, mood or satisfaction with services. The authors conclude that appropriately resourced ESD services provided for a selected group of stroke patients can reduce long term dependency and admission to institutional care as well as reducing the length of hospital stay. No adverse impact was observed on the mood or subjective health status of patients or carers.

Feinberg, J. R., & Brandt, K. D. (1984). Allied health team management of rheumatoid arthritis patients. *The American Journal of Occupational Therapy.: Official Publication of the American Occupational Therapy Association*, 38(9), 613-620.

The use of a coordinated team of allied health professionals (AHPs) to treat patients with rheumatoid arthritis assigned to experimental groups (EG) and comparison groups (CG) was assessed. The EG patients were evaluated regularly by each AHP team member, whereas CG patients were seen by AHPs only upon referral. Of the 10 EG and 13 CG patients who remained in the study for 2 years, the EG patients initially exhibited somewhat greater disease activity than CG (as reflected by erythrocyte sedimentation rate and duration of morning stiffness). After 2 years, EG patients demonstrated less disease activity than at the outset, whereas CG patients either showed little change in these parameters or deteriorated during the study. Grip strength, which was initially similar in the two groups, improved in EG patients but decreased in CG patients, so that after 2 years a significant difference was noted between the two groups (p less than .05). Tendency to lose hand range of motion was also greater in CG than in EG patients. Some EG patients showed improvement in finger flexion deformities during the study. Furthermore, EG patients showed a greater tendency to acquire positive attitudes regarding themselves and family relationships. These results suggest that ongoing "team care" may be more efficacious than episodic use of AHPs in management of patients with mild rheumatoid arthritis.

Glasziou, P., Irwig, L., & Mant, D. (2005). Monitoring in chronic disease: A rational approach. *British Medical Journal*, 330(7492), 644-644-648.

Monitoring chronic diseases for both benefit and harm is important, preferably with a single measurement. Monitoring is not always necessary or beneficial and can lead to inappropriate changes. Monitoring aims to establish the response to treatment, detect the need to adjust

treatment, and detect adverse effects. Control charts help distinguish natural variability from true change and reduce unnecessary adjustment.

Hroschikoski, M. C., Solberg, L. I., Sperl-Hillen, J. M., Harper, P. G., McGrail, M. P., & Crabtree, B. F. (2006). Challenges of change: A qualitative study of chronic care model implementation. *Annals of Family Medicine, 4*, 317-317-326.

The Chronic Care Model (CCM) works to improve health care for patients with chronic conditions. Small changes were seen with the implementation of the CCM with many identifiable barriers. It was found that there are many organizational challenges with the transformation of health care with the CCM because it is not a specific model.

Jaber, R., Braksmajer, A., & Trilling, J. S. (2006). Group visits: A qualitative review of current research. *Journal of the American Board of Family Medicine : JABFM, 19*(3), 276-290.

PURPOSE: The group visit model has emerged as one possible solution to problems posed by the limitations of current structures of care and the demands of a growing chronic illness load. In this article, we summarize current group visit research and develop suggestions for furthering this care model. METHODS: An electronic review of all group visit articles published from the years 1974 to 2004 was conducted via the PubMed and MedLine databases. Reference sections of articles thus obtained were mined for additional citations. Articles were excluded if: (1) they were not research studies (ie, purely descriptive, with no evaluative component); or (2) the group visit intervention was subsumed under larger primary or hospital-based interventions. RESULTS: Although the heterogeneity of the studies presented renders the assessment of this care model problematic, there is sufficient data to support the effectiveness of group visits in improving patient and physician satisfaction, quality of care, quality of life, and in decreasing emergency department and specialist visits. CONCLUSION: Group visits are a promising approach to chronic care management for the motivated patient. Future research may benefit, however, from abandoning old nomenclatures and clearly defining the structure, processes of care, content of visits, and appropriate outcome measures.

LaBresh, K. A., Ellrodt, A. G., Gliklich, R., Liljestrand, J., & Peto, R. (2004). Get with the guidelines for cardiovascular secondary prevention: Pilot results. *Archives of Internal Medicine, 164*(3), 203-203-209.

Data collection and outcome measures were completed by 24 hospitals on patients admitted to the hospital with coronary artery disease. The following outcome measures were completed at baseline and 10- to 12-month follow-up: aspirin use, beta-blockers, angiotensin-converting enzyme inhibitors, cholesterol management and treatment, smoking cessation counseling, blood pressure control, and cardiac rehabilitation referral. Prevention guideline adherence in hospitalized patients with coronary artery disease was improved with the web program utilization, interactive physician training, and initiation of collaborative quality improvement.

Ross, F., & Harris, R. (2005). Can interprofessional education make a difference in the care of people with chronic disease? *Chronic Illness, 1*(1), 81-81-86.

This article questions what is already known about interprofessional interventions and the care of people with long-term conditions. In addition, the article examines available evidence and the potential for interprofessional education in changing practices.

Solberg, L. I., Crain, A. L., Sperl-Hillen, J. M., Hroschikoski, M. C., Engebretson, K. I., & O'Connor, P. J. (2006). Care quality and implementation of the chronic care model: A quantitative study. *Annals of Family Medicine, 4*, 310-310-316.

This article assessed whether changes in the Chronic Care Model (CCM) would correlate with changes in care quality. A survey was completed before and after implementation of CCM with respect to diabetes, coronary heart disease, or depression. There were few significant correlations between the changes, but improvements in quality measure did occur for the 3 chronic diseases.

- Taylor, S. J. C., Candy, B., Bryar, R. M., Ramsay, J., Vrijhoef, H. J. M., Esmond, G., et al. (2005). Effectiveness of innovations in nurse led chronic disease management for patients with chronic obstructive pulmonary disease: Systematic review of evidence. *British Medical Journal*, 331(7515), 485.
- This article describes a systematic review of the literature that searched for articles containing chronic disease management in inpatient, outpatient, and community-based interventions completed by nurses. The authors found little evidence supporting the use of nurse led medical management for patients with COPD. They concluded that while there is little data to support the role of the nurses, there is even less data stating any negative effect of the nurse in this medical management role.
- Tijhuis, G. J., Zwinderman, A. H., Hazes, J. M., Breedveld, F. C., & Vlieland, P. M. (2003). Two-year follow-up of a randomized controlled trial of a clinical nurse specialist intervention, inpatient, and day patient team care in rheumatoid arthritis. *Journal of Advanced Nursing*, 41(1), 34-43.
- AIM: To compare the long-term effectiveness of care delivered by a clinical nurse specialist (CNS) with inpatient team care and day patient team care in patients with rheumatoid arthritis and increasing functional limitations. Background. The role of CNSs in the management of patients with rheumatoid arthritis (RA) is evolving, and their effectiveness in comparison with care provided by a rheumatologist alone has been established. However, long-term controlled studies showing how the effectiveness of CNSs compares with that of other forms of co-ordinated care, such as multidisciplinary team care, are lacking. METHODS: Two hundred and ten patients rheumatoid arthritis patients were randomized to care delivered by a CNS in a rheumatology outpatient clinic (12 weeks), inpatient team care (2 weeks) and day patient team care (3 weeks). Clinical assessments recorded on study entry, weeks 12, 26, 52, 78 and 104 comprised the health assessment questionnaire (HAQ) and MacMaster Toronto Arthritis (MACTAR) patient preference interview as primary outcome measures. Grip strength, walk test, RAND-36, Rheumatoid Arthritis Quality of Life questionnaire and disease activity score (DAS) were applied as secondary outcome measures. RESULTS: No significant differences in medical treatment, use of services of other health professionals, introduction of adaptive equipment or number of hospitalizations were observed between the three treatment groups during 2 year follow-up, except that visits to nurse specialists were more frequent and home help was less frequent in the CNS group. A comparison of clinical outcomes among the three groups and a comparison between the nurse specialist and inpatient and day patient care groups together did not show any significant differences. Within all three groups functional status, quality of life and disease activity improved significantly ($P < 0.05$). In general, the results obtained after 12 weeks remained stable until 104 weeks after the start of the study. CONCLUSION: Care provided by a CNS in an outpatient rheumatology clinic has a similar long-term clinical outcome to inpatient and day patient team care in patients with rheumatoid arthritis. A CNS intervention appears to be an effective innovation in the care for patients with rheumatoid arthritis.
- Tijhuis, G. J., Zwinderman, A. H., Hazes, J. M., Van Den Hout, W. B., Breedveld, F. C., & Vliet Vlieland, T. P. (2002). A randomized comparison of care provided by a clinical nurse specialist, an inpatient team, and a day patient team in rheumatoid arthritis. *Arthritis and Rheumatism*, 47(5), 525-531. doi:10.1002/art.10665
- OBJECTIVES: To compare in a randomized, controlled trial the clinical effectiveness of care delivered by a clinical nurse specialist, inpatient team care, and day patient team care in patients with rheumatoid arthritis (RA) who have increasing functional limitations. METHODS: Between December 1996 and January 1999, 210 patients with RA were recruited in the outpatient clinic of the rheumatology department of 6 academic and nonacademic hospitals. Clinical assessments recorded on study entry and weeks 6, 12, 26, and 52 included the Health Assessment Questionnaire (HAQ) and the McMaster Toronto Arthritis Patient Preference Disability Questionnaire as primary outcome measures, and the RAND-36 Item Health Survey, the Rheumatoid Arthritis Quality of Life questionnaire, the Health Utility Rating Scale, and the Disease Activity Score as secondary outcome measures. Patient satisfaction with care was measured on a visual analog scale in week 6 in all 3 groups and again in week 12 in the nurse specialist group. RESULTS: Within all 3 groups, functional status, quality of life, health utility, and disease activity improved significantly over time ($P < 0.05$).

However, a comparison of clinical outcome among the 3 groups and a comparison between the nurse specialist group and the inpatient and day patient care groups together did not show any sustained significant differences. Subgroup analysis showed that age had a significant impact on differences between the 3 treatment groups with respect to functional outcome as measured with the HAQ ($P < 0.001$). With increasing age, the most favorable outcome shifted from care provided by a clinical nurse specialist and inpatient care to day patient care. Patients' satisfaction with care was significantly lower in the nurse specialist group than in the inpatient and day patient care groups ($P < 0.001$). CONCLUSION: Care provided by a clinical nurse specialist appears to have a similar clinical outcome in comparison with inpatient and day patient team care. Although all patients were highly satisfied with multidisciplinary care, patients who received care provided by a clinical nurse specialist were slightly less satisfied than those who received inpatient or day patient team care. Age appeared to be the only factor related to differences in functional outcome between the 3 treatment groups. The choice of management strategy may, apart from age, further be dependent on the availability of facilities, the preferences of patients and health care providers, and economic considerations.

Vliet Vlieland, T. P., Breedveld, F. C., & Hazes, J. M. (1997). The two-year follow-up of a randomized comparison of in-patient multidisciplinary team care and routine out-patient care for active rheumatoid arthritis. *British Journal of Rheumatology*, 36(1), 82-85.

The long-term effects of a period of 11 days of in-patient multidisciplinary team care were compared with routine out-patient care in 80 patients with active rheumatoid arthritis (RA). Endpoint measures included swollen and tender joint counts, the patient's assessment of pain, the patient's and the physician's assessments of disease activity, the ESR and the Health Assessment Questionnaire (HAQ). Two years after hospitalization, all 39 patients randomized to the in-patient group and 39 out of 41 patients randomized to the out-patient group were evaluable. At 2 yr, in the in-patient group the improvement according to mean changes from baseline was greater than that in the out-patient group for all endpoint measures except for the HAQ score, the differences not reaching statistical significance. Averaged over the time points 2, 52 and 104 weeks, the improvement was significantly greater in the in-patient group than in the out-patient group, except for the ESR and HAQ score. In conclusion, a short period of in-patient multidisciplinary team care has a beneficial effect on disease activity over a period of 2 yr and should be considered as a useful treatment modality in patients with active RA.