

# Improving Heart Failure Outcomes through Specialist Nurse Intervention

Blue L, Lang E, McMurray JJ, et al. Randomised controlled trial of specialist nurse intervention in heart failure. *BMJ* 2001;323:715-8.

## Study Overview

**Objective.** To determine if a home- and telephone-based intervention by specialist nurses improves outcomes in patients with chronic heart failure.

**Design.** Randomized controlled trial.

**Setting and participants.** 165 patients admitted as an emergency to a single teaching hospital (Glasgow, Scotland) with heart failure due to left ventricular systolic dysfunction between March 1997 and November 1998 were included. The average age of subjects was 75 years, and most patients could be classified as New York Heart Association class III or IV on admission. Patients were excluded if they were unable to consent to or comply with the intervention; had an acute myocardial infarction or life-threatening comorbidity; were discharged to a long-term care facility; or resided outside the catchment area.

**Intervention.** Following hospital discharge, the intervention group ( $n = 84$ ) received tapering home visits and telephone contact from a trained specialist nurse who provided patient education, helped optimize treatment, taught self-monitoring, gave psychological support, and communicated with other members of the health care team. The control group ( $n = 81$ ) received usual care.

**Main outcome measures.** The primary endpoint was death from all causes or admission for heart failure. Secondary endpoints included death or any hospitalization, hospitalization for worsening heart failure, and all-cause hospitalization. Follow-up was for 1 year.

**Main results.** 30% of all subjects died and 45% were admitted for heart failure. 37% of the intervention group and 53% of the controls reached the primary endpoint of death or readmission, (relative risk, 0.61 [95% confidence interval, 0.33 to 0.96];  $P = 0.033$ ). There were no important differences in all-cause death or all-cause readmission, but in the intervention group there were significantly fewer admissions for heart failure (14% versus 32%) and fewer days in the hospital for heart failure (mean, 3.4 versus 7.5;  $P = 0.005$ ).

**Conclusion.** Through home visits and telephone contact, specialty nurses were able to improve outcomes for heart failure patients following hospital discharge.

## Commentary

Although their sample size was fairly small, Blue et al were able to detect a significant and clinically relevant 16% reduction in their primary endpoint. This study gives further support to an emerging body of knowledge that demonstrates the benefits of an intensive, multidisciplinary team approach in heart failure management [1-3]. These past studies used a variety of interventions that have ranged from a single post-discharge home visit to more comprehensive patient education and follow-up, either at home or in the outpatient setting. One limitation of the current study is that the frequency of the visits and the cost required to obtain these benefits are not given. Since the number of readmissions and the number of days in the hospital were reduced with the intervention, it is possible that this care plan may actually be cost-saving, as was the case in a previous study [1]. An earlier study with results that were critical of home health care for heart failure noted greater costs without improvements in outcomes, but the data from that study were not obtained from a controlled trial [4]. Therefore, further information on cost would be useful.

As the authors point out,  $\beta$  blockers were not widely used in their study population. Given the slow dose titration associated with these medications and their potential to precipitate worsening heart failure, it seems likely that more intensive education and monitoring would further improve outcomes in a heart failure population treated with  $\beta$  blockers.

## Applications for Clinical Practice

Studies of several strategies to intensify education and follow-up in heart failure patients have shown benefit. Since these interventions have not been compared against each other, the relative benefits and costs of different programs are unknown. In addition, the methods for covering the direct costs for these interventions in most care settings are not established. Groups of providers who care for patients with heart failure can draw from this growing body of evidence as they strive to coordinate and improve care. Local availability of

personnel, payments, and other resources, however, may strongly influence the intensity and setting of real-world interventions. As evidence mounts that this type of intervention has benefit, payers such as the large insurers or the federal government should give incentives to support those who provide these services.

*—Review by Stephen D. Persell, MD*

### References

1. Rich MW, Beckham V, Wittenberg C, et al. A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *N Engl J Med* 1995;333:1190–5.
2. Stewart S, Marley JE, Horowitz JD. Effects of a multidisciplinary, home-based intervention on unplanned readmissions and survival among patients with chronic congestive heart failure: a randomised controlled study. *Lancet* 1999;354:1077–83.
3. Cline CM, Israelsson BY, Willenheimer RB, et al. Cost effective management programme for heart failure reduces hospitalisation. *Heart* 1998;80:442–6.
4. Wilson JR, Smith JS, Dahle KL, Ingersoll GL. Impact of home health care on health care costs and hospitalization frequency in patients with heart failure. *Am J Cardiol* 1999;83:615–7.

Copyright 2001 by Turner White Communications Inc., Wayne, PA. All rights reserved.