A home based intervention reduced the frequency of hospital readmissions and out of hospital deaths after discharge

Stewart S, Pearson S, Luke CG, et al. *Effects of home-based intervention on unplanned readmissions and out-of-hospital deaths. J Am Geriatr Soc* 1998 Feb;46:174–80.

Question

Can a home based intervention reduce the frequency of unplanned readmissions and out of hospital deaths in patients with a chronic condition who are discharged from hospital and prescribed medication?

Design

Randomised controlled trial with 6 months follow up.

Setting

A tertiary referral hospital in Adelaide, South Australia.

Patients

4100 patients, of whom 22% met eligibility criteria, were screened over 12 months. 762 medical and surgical inpatients (mean age 66 y, 50% women) who had been prescribed medication for a chronic condition and were about to be discharged home agreed to participate. Exclusion criteria were terminal malignancy or residence outside the hospital catchment area. Patients were designated at high risk for readmission if they had several of the following risk factors: ≥ 60 years of age; ≥ 2 prescription medications; an unplanned hospital admission within the previous 6 months; lived alone; and limited English language skills.

Intervention

Patients were allocated to a home based intervention ($n = 381$) or usual care ($n = 381$). The home based intervention consisted of counselling for all patients and their caregivers before discharge regarding medications and early detection and reporting of deterioration. After discharge, 314 patients who were identified to be at high risk were visited at home by the study nurse and pharmacist. Patients who showed poor medication compliance or knowledge

received more intensive follow up, which included remedial counselling, monitoring, and referral to community pharmacists for follow up at the time of prescription refills. Patients in the usual care group received discharge planning and visited their primary care physician within 2 weeks of discharge.

Main outcome measure

Combined endpoint of unplanned hospital readmissions and out of hospital deaths.

Main results

The total number of unplanned hospital readmissions plus out of hospital deaths (events) were fewer in the home based intervention group than in the usual care group (155 v 217 readmissions and deaths, $p < 0.001$). However, when comparing the number of patients who had the combined endpoint, there was no difference between groups in the number of patients who had the combined endpoint of unplanned hospital readmission and out of hospital death ($p = 0.299$). Of the patients who were readmitted to hospital, fewer patients who received the home based intervention had ≥ 3 readmissions than did those who received usual care (12% v 23%, $p = 0.035$).

Conclusions

Compared with usual care, a home based intervention after hospital discharge reduced the total number of deaths and unplanned hospital readmissions but not the number of patients experiencing these outcome events

Source of funding: Commonwealth Department of Health and Family Services of Australia.

For correspondence: Dr J D Horowitz, Department of Cardiology, The Queen Elizabeth Hospital, 28 Woodville Road, Woodville, South Australia 5011, Australia. Fax +61 8 8222 6030.

Commentary

The study by Stewart *et al* provides important support for home focused interventions by nurses and clinical pharmacists. The authors used a mix of medical and surgical patients so the results potentially apply to most elderly adults in hospital. A combined end point of unplanned hospital readmissions plus out of hospital deaths was used as the main outcome, but the study also measured the duration of unplanned readmissions, emergency visits, provider visits, and costs.

This was a relatively simple, inexpensive intervention. From a clinical perspective, this programme is easy to do. Indeed, the

comprehensive assessment of the patient, patient teaching, and nurse-primary provider contact are already part of home health nursing. The difference was the medication management assessment and teaching by a pharmacist and the close coordination between inpatient teaching and the home visit. The costs for this programme were not prohibitive. How costs are calculated may be the deciding factor in implementing similar programmes because savings shown are at an organisational level. In this study, the programme paid for itself out of the readmission expense savings.

The study followed up patients for 6 months, but most elderly patients have chronic conditions that last a lifetime. The key to a successful programme is identifying and focusing on high risk patients.¹ The effectiveness of this programme is supported by other clinical research.^{2,3}

George F Shuster, RN, DNS
Associate Professor of Nursing
University of New Mexico
Albuquerque, New Mexico, USA

1 Anderson MA, Hanson KS, DeVilder NW, et al. *J Community Health Nurs* 1996;13:1–12.

2 Lasater M. *Home Healthc Nurs* 1996;14:351–6.

3 Martens KH, Mellor SD. *Home Healthc Nurse* 1997;15:123–9.