

# A structured discharge package given by a nurse reduced hospital readmission and reattendance in children with asthma

Wesseldine LJ, McCarthy P, Silverman M. **Structured discharge procedure for children admitted to hospital with acute asthma: a randomised controlled trial of nursing practice.** Arch Dis Child. 1999 Feb; 80:110-4.

## Question

In children hospitalised for acute asthma, can a structured discharge package given by a nurse reduce the rates of hospital readmission and reattendance?

## Design

Randomised (concealed), unblinded, controlled trial with 6-month follow-up.

## Setting

Children's hospital in Leicester, England, United Kingdom.

## Patients

160 children who were 2 to 16 years of age (median age 6 y, 61% boys) and were admitted to hospital with acute asthma. Follow-up was 100% for readmission and reattendance and 97% for consultation with general practitioners (GPs).

## Intervention

Children were allocated to receive structured discharge packages ( $n = 80$ ) or no

intervention ( $n = 80$ ). A specialist nurse gave the structured discharge package that consisted of a 20-minute interview during which information was given about the nature of asthma, how to recognise and avoid risk factors, and available drugs and devices. For each child, an individual written home management plan was prepared. Short courses of oral steroids were included in the management plan if children had used steroids before and had parental consent. Parents and children received a booklet to reinforce information given in the interview and to provide local and national contact information for obtaining additional advice.

## Main outcome measures

Readmission to hospital. Secondary outcome measures included reattendance without readmission and consultation with GPs for problematic asthma.

## Main results

At 6 months, fewer children in the structured-discharge group were readmitted ( $P = 0.001$ ), visited the emergency department ( $P < 0.001$ ), and had consultations with GPs for problematic asthma ( $P < 0.001$ ) than in the control group (Table).

## Conclusion

In children hospitalised for acute asthma, a structured discharge package given by a nurse led to a decrease in hospital readmission and reattendance rates.

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## Structured discharge packages vs no packages for acute asthma in children\*

Outcomes at 6 mo	Structured discharge	No packages	RRR (95% CI)	NNT (CI)
Hospital readmission	15%	39%	60% (29 to 78)	5 (3 to 12)
Hospital reattendance	8%	38%	81% (58 to 91)	4 (3 to 6)
Consultation with GP	40%	94%	57% (45 to 68)	2 (2 to 3)

\*GP = general practitioner. Other abbreviations defined in Glossary; RRR, NNT, and CI calculated from data in article.

## Commentary

The study by Wesseldine and colleagues shows that giving information for guided self-management at discharge reduces the risk for readmission for asthma by 60%. This reduction, in contrast to the results of a meta-analysis (1), suggests that a positive effect may be more readily seen in asthmatic patients who have higher baseline morbidity and who receive a written action plan at a time when caregivers may be most receptive to recommendations.

Does it matter which information given in the interview was most critical to success? Probably not, because most experts would agree that such information should ideally be mastered by all asthmatic patients. Evidence that a written action plan is key to reducing morbidity is still not shown. Although this trial provides some indirect evi-

dence that a written action plan may be important, its inclusion in the packaged education session entangles the issue.

Although patients could not be blinded, every effort should have been made to blind the assessors and health professionals. The main criticism, however, is the lack of information for assessing generalisability and replicating the intervention. Description of the gap in knowledge and skills and the change in management provided in the action plan would have been useful. This information is essential for clinicians to determine whether their patients are similar enough to show similar benefit and to replicate the intervention.

A hospital admission should be considered a failure of asthma management and should lead to reassessment of basic asthma knowl-

edge; more education about avoidance of triggers, compliance, inhaler technique, and appropriate use of relievers and preventive agents; and review of the appropriateness of an action plan. The best means to achieve long-term knowledge still requires research. This trial provides evidence that a 20-minute, face-to-face, structured meeting before hospital discharge with a nurse who is skilled in asthma management, along with some written material and a written home management plan, is effective.

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## Reference

1. Bernard-Bonin AC, Stachenko S, Bonin D, Charette C, Rousseau E. J Allergy Clin Immunol. 1995;95:34-41.