

A nurse-led education programme reduced readmissions in children hospitalised with acute asthma

Madge P, McColl J, Paton J. **Impact of a nurse-led home management training programme in children admitted to hospital with acute asthma: a randomised controlled study.** *Thorax.* 1997 Mar;52:223-8.

Objective

To determine whether a nurse-led education programme for parents of children who were hospitalised with asthma reduces readmissions.

Design

12-month randomised controlled trial.

Setting

4 wards of a large children's teaching hospital in Scotland.

Patients

201 children who were ≥ 2 years of age (49% were 2 to 5 years of age, 62% boys) and were hospitalised with acute asthma.

Intervention

96 children were allocated to the nurse-led training programme and 105 to usual care. The study nurse who had specialist asthma training met briefly with parents within 24 hours of admission and then, on average,

held 2 further teaching and discussion sessions with each family (total approximately 45 min). Parents received information on asthma, its triggers and treatment, and signs of impending asthma attacks; an individualised written treatment plan; a course of oral steroids with instructions about when to start; an appointment in a nurse-run asthma clinic; the opportunity to contact a nurse by telephone for advice; and if their child was older than 5 years, a peak flow meter with instructions on its use. The investigator did not document the community follow-up care in either group, nor did she ascertain the steroid use in either group after discharge.

Main outcome measures

The primary outcome was hospital readmissions, and the secondary outcome was number of emergency department visits.

Nurse-led education vs usual care*

Outcome up to 14 months	Education EER	Usual care CER	RRR (95% CI)	ARR EER - CER	NNT (CI)
Readmission	8.3%	25%	67% (31 to 84)	16%	7 (4 to 16)

*Abbreviations defined in Glossary; RRR, ARR, NNT, and CI calculated from data in article.

Main results

Fewer children who received the nurse-led education programme were re-hospitalised than were children who received usual care ($P = 0.002$) (Table). The groups did not differ for emergency department visits (7.3% vs 6.7%, 95% CI for the 0.6% difference -9% to 7%).

Conclusion

Children hospitalised for acute asthma whose parents received a nurse-led home management education programme had fewer readmissions than did children who received usual care.

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Commentary

Controlled trials of education programmes for patients with asthma have been inconsistent in their effect on patient outcomes (1-3). The present study by Madge and colleagues of children > 2 years of age hospitalised with asthma in Glasgow showed a reduction in readmission rate; it also showed reduced symptom scores 3 to 4 weeks after hospital discharge in those receiving training in home management from a nurse. What might be the secrets of success here? The training intervention was initiated during admission and was then continued by a single nurse with specialised training in asthma. The intervention involved 2 or 3 meetings during admission with telephone access and a nurse clinic appointment after discharge. Before hospital discharge, patients received oral steroids and instructions in their use.

We do not have information on the amount of telephone advice provided or on attendance rates at the follow-up clinic. Beyond the information available 3 to 4 weeks after discharge, the only outcomes studied were admission or emergency department attendance at the study hospital. We do not know about later contacts with primary care personnel or with other hospitals or about use of oral steroids in either the intervention or control groups. We do not know what proportion of the nurse's time was used on the 96 children in the intervention group during the study year and therefore the level of resource investment in the programme. The study shows that a dedicated nurse providing asthma education to the parents of a relatively small number of children admitted

with severe asthma can reduce the re-admission rate in this setting. It does not allow us to judge whether the benefits are applicable to other settings in which standard follow-up and treatment may differ or to assess the full resource implications of the intervention.

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References

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