doi: 10.1111/j.1742-6723.2006.00929.x *Emergency Medicine Australasia* (2007) **19**, 59–62

SHORT REPORT

Improving asthma discharge management in relation to emergency departments: The ADMIRE project

Anne-Maree Kelly* and Megan Clooney*
Joseph Epstein Centre for Emergency Medicine Research, Western Health, St Albans, Victoria, Australia

Abstract

The present paper describes the process, outcomes and lessons learned from a federally funded, multicentre action research project aimed at improving discharge practices for asthma patients who attend ED and are discharged home. Thirty-two ED participated and worked locally to improve discharge practices using previously published best-practice guidelines. Although they achieved some improvements, major barriers to best-practice discharge outside ED control were identified, including access to GP, hospital policies regarding supply of medications and access to appropriate asthma education. The ED developed some useful tools to assist with improving asthma management that have been compiled as a toolkit and are available online.

Key words: *asthma*, *discharge*, *emergency*.

Background

Asthma affects more than 2 million Australians.[1] In 2003, the Department of Health and Ageing commissioned a report into best practice for patients with asthma discharged from hospitals. The report, entitled *Review of best practice hospital discharge practices for asthma patients* [2] (commonly referred to as the Grimmer report), identified core elements of best-practice hospital discharge for asthma patients, including but not limited to patients discharged after treatment in an ED. It made a number of recommendations regarding asthma discharge, which are summarized in Table 1. The report in full can be accessed at http://www.wh.org.au/jecemr/background.htm.

In response to that report, the Department of Health and Ageing, on the recommendation of the National Asthma Reference Group, funded a project that aimed to improve discharge practices for ED patients treated with asthma. The specific objectives of the project were to improve linkage of patients with health professionals, particularly between hospital and community-based care, development and possession of an appropriate written short-term Asthma Action Plan, communication between ED and relevant health professionals and prescribing of appropriate discharge medications.

Correspondence: Professor Anne-Maree Kelly, Joseph Epstein Centre for Emergency Medicine Research, Sunshine Hospital, 172 Furlong Road, St Albans 3021, Vic., Australia. Email: Anne-Maree.Kelly@wh.org.au

*On behalf of the ADMIRE project group (see acknowledgements).

Table 1. Key recommendations of the Grimmer report[2]

Documentation of current demographic details, for example, name, address, age, employment details, presence of carer or family member, current use of community support, name and contact details of general practitioner (GP).
Provision of written current short-term asthma action plan, including medications in a language the patient understands.
History of asthma, including knowledge and potential risk factors.
History of current episode/presenting complaint, including perceived triggers and recent compliance with action plan.
Documentation of medication type, compliance and education, including ability to use delivery devices correctly.
Education of patient and family about resources that are available in the community, for example, Asthma Foundation, Asthma educators, support groups.
Educate patient and family about use of medications and their side effects etc., triggers, use of action plans, preventing another presentation to the ED, when to seek medical advice and to promote self-management of their asthma through provision of written information sheets available at Asthma Foundations.
Arrange follow up with GP, specialist, outpatient clinic and community pharmacist.
Detailed discharge letter to be written and supplied to the patient on discharge and faxed or emailed to community health providers, for example, GP, asthma educator, respiratory specialist.
Discharge letter to include date and time of presentation, presenting complaint, including diagnosis and severity, investigations and results, management, recommended asthma action plan, medications prescribed, list of possible triggers for this episode, suggested follow up with community resources, education given to the patient/family.
Medication regime should be checked and updated if needed in line with quality-use-of-medicine principles.
Patient to be encouraged to have regular consultation with their GP (to develop and monitor long-term action plans), outpatient clinic, asthma educator, community pharmacist.
On discharge, patients should be given information sheets regarding asthma, medications, action plan, advice on what to do if asthma occurs again etc. They should also be made aware of follow-up options, how and when to use their medication.

The process

This project was an action research/quality improvement project conducted between July 2004 and February 2005. Each site collected baseline data and analysed it against the recommendations of the Grimmer report.[2] The sites chose areas for action and collected data monthly to monitor their progress using an explicit data collection form. Support, in the form of data management, identification of strategies and resources, a website and experience-sharing teleconferences were provided by a central coordinator.

Thirty-two ED participated in the project (see acknowledgements). Both adults and children were included; however, patients aged less than 1 year were excluded to reduce overlap with bronchiolitis.

Data were collected by audit of from hospital records and included demographic data, exposure to asthma education, whether the patient has a regular general practitioner (GP), possession of an asthma action plan, severity of the current attack, discharge management (including short-term action plan, letter to GP, list of medications, provision of medications, prescriptions of corticosteroids and follow-up arrangements) and re-presentation within 5 days. A proportion of patients were also contacted by telephone to ascertain whether they had attended follow up, whether they had re-presented to another hospital with asthma and, if so, the outcome. After completion of the project, hospitals were surveyed about success and failure factors, sustainability and barriers to further improvement.

What was learned

The analysis phase of the project identified a number of key barriers to best-practice asthma discharge processes, which are summarized in Table 2.

The sample of patients studied gave some important information to inform service planning. About 40% of asthma presentations were children (aged less than 16 years), so child-friendly treatment and education is a key need as is education for parents. Approximately 30% of patients presented during 'office hours'. This reinforces that discharge processes that facilitate access to medications and making of follow-up arrangements out of hours are needed. Only 43% reported having an asthma action plan. The ED visit is an opportunity to address this.

Of the patients who underwent telephone follow up, only 61% were reviewed by their GP/specialist within 7 days. This is less than ideal as early follow up has been shown to reduce re-presentation to hospital.

Table 2. Main barriers to best-practice discharge processes

Common
Hospital policies regarding medication supply
Lack of access to general practitioners (GP): numbers, cost.
Patient relationships with GP
High turnovers of ED staff
ED documentation systems
Patient factors in follow up – not making appointment, not attending
ED staff knowledge
Less common
Poor relationships with inpatient unit and quarantining of resources for admitted patients
Lack of support at hospital executive level for change

Although some modest improvements in some aspects of care were observed (see full report http://www.wh.org.au/jecemr/progress.htm), the key outcomes were the delineation of barriers to best care and the processes developed by ED to improve care. The latter have been compiled in a toolkit that is available at http://www.wh.org.au/jecemr/tools.htm.

Post-programme review identified important barriers to full implementation of the Grimmer recommendations.[2] Many of the barriers to best-practice ED asthma discharge processes were outside ED control, such as access to GP or outpatients and hospital policies regarding supply of medications. Resources for improved asthma discharge management and monitoring of performance are not available in many centres. Additionally, high staff turnover in many ED makes keeping staff informed about best practice for asthma discharge difficult. The post-programme review also identified a number of gaps that could be addressed, in particular the development of simple short-term action plans in languages other than English and that are suitable for patients with limited reading skills and availability of patient education resources that do not rely heavily on direct staff input.

Future challenges

Although many ED achieved improvements in some areas of asthma discharge practice, these were, for the most part, those within ED control and not reliant on outside departments or agencies. Cross-department/agency issues were not significantly affected, highlighting that many aspects of ED function rely on effective systems and relationships beyond the ED, for example with GP. Unless these are addressed at organizational levels, change is unlikely. Key problem areas we identified were hospital policies limiting or prohibiting the supply of medication to ED patients and access to asthma educators, access to GP for follow-up appointments and timely access to specialists.

With respect to access to asthma educators, our data suggest that very few patients attending ED with asthma have ever had exposure to an asthma educator. However, given that 75% of asthma presentations to ED are treated and discharged, including significant proportions with moderate or severe exacerbations,[3] access to asthma educators either within or by referral from ED should be a priority.

The proportion of patients receiving asthma education by ED staff was only moderate, although it is probably under-documented as much advice is verbal. Barriers identified were staff time and lack of suitable educational resources. The latter includes lack of facilities for using more technologically advanced education techniques, such as video or computer-based education programmes (including interactive CDs), and lack of resources in appropriate languages. To be widely available in ED, educational approaches that require less direct-staff time are more likely to be practical. Computer-based programmes have been shown to be as effective as traditional paper-based education.[4,5]

Access to GP for timely follow up proved to be a larger issue than was anticipated. Although reported widely, it seemed to be particularly problematic in rural cities or towns, where the wait for a GP appointment was reported to be 'weeks'. Similar problems were reported for outpatient/specialist follow up, which were in part related to shortages of specialists and closure of many hospital outpatient clinics. Timely follow up is an essential component of best-practice asthma care. Strategies to improve access to follow-up appointments will require support from Divisions of General Practice and individual GP to make appointments available. The development of effective communication systems between the ED and GP, which will alert the GP to which patients need early review, may also lead to decreased delay in waiting times for these patients.

The failure of almost 40% of patients to have follow up within 1 week is a cause for concern. One barrier already discussed is access to GP, but there are also likely to be barriers at the patient's end. These might include cost, failure to appreciate the benefits of follow up and problems arranging follow up to fit in with work/school commitments. Written information provided to patients should include an explanation of the importance of follow up.

Summary

This project has been successful in identifying barriers to best-practice asthma discharge and opportunities for improved practice, particularly that many of the barriers are outside ED control and require cross-department/agency collaboration or systems. It has also led to the development and sharing of useful resources. It is hoped this project will inform future policy direction, both locally and nationally, with respect to coordinating asthma management across the continuum of care.

Acknowledgements

This project was funded by the Australian Government, Department of Health and Ageing, Asthma and Arthritis Section under National Health Priority Funding. We appreciate the support from the directors and staff of the participating ED. Dr G McInerney (Auburn Hospital), A/Prof G Braitberg (Austin Hospital), Dr J Cruickshank and Ms J Clack (Ballarat Hospital), Dr A Singer and Ms C Paini (The Canberra Hospital), Dr M Chu (Canterbury Hospital), Dr C Constantine (Coffs Harbour Hospital), Dr R Meek (Dandenong Hospital), Dr M Wadsworth (Flinders Medical Centre), Dr Y Nagree and Mr B Dalmolin (Fremantle Hospital), Dr D Campbell and Mrs M Zimmerman (Gold Coast Hospital), Dr D Gullick and Miss J Webster (Goulburn Valley Hospital), Ms J Dodds (Mackay Base Hospital), Dr R Whitaker (Newcastle Mater Misericordiae Hospital), Dr N Milns (Rockhampton Hospital), Dr S Sowerby and Ms G McColloch (Rockingham-Kwinana Hospital), Dr T Saoulsby and Ms A Morisset (Royal Adelaide Hospital), Dr K Chu and Ms P Nadarajah (Royal Brisbane and Women's Hospital), Drs D Palmer and M Harris (Royal Darwin Hospital), Dr J Edwards (Royal Prince Alfred Hospital), Dr A Williams (Sir Charles Gairdner Hospital), Dr M Duffy (St Vincent's Hospital, Sydney), Dr M Matthiesson and Ms K Alsop (Sunshine Hospital), Dr E Cottrell and Ms B Altavilla (Sydney Children's Hospital), A/Prof S Doherty (Tamworth Base Hospital), Ms A St Clair (Wagga Wagga Hospital), Dr D Lightfoot and Ms V Purvis (Western Hospital), Dr L Dann (Bankstown-Lidcombe Hospital), Dr B Hughes (Woollongong Hospital), Dr G Ramin and Ms J Riding (The Tweed Hospital), Dr D Lewis-Driver (Logan Hospital), Dr P Archer and Ms D van Vugt (Maroondah Hospital), and Dr E Mowatt, Dr A Brown and Ms S Svenson (Alice Springs Hospital). We also like to thank the members of the project steering committee: Dr A Meyer, Dr J Aloizos, Dr M Harris, A/Prof S Doherty, Ms C Allen, Ms G Herbert and Mr R Ould. Debra Kerr of the Joseph Epstein Centre for Emergency Medicine Research assisted with statistical analysis.

Competing interests

None declared.

Accepted 25 August 2006

References

1. Australian Institute of Health and Welfare. *Australia's Health 2004*. Canberra: AIHW, 2004.
2. Grimmer K, Peoples C, Steele E, Kumar S. *Review of Best Practice Hospital Discharge Practices for Asthma Patients*. Adelaide: University of South Australia 2003. Available from URL: http://www.wh.org.au/jecemr/asthma.pdf
3. Kelly AM, Powell C, Kerr D. A snapshot of asthma in Australia. *Intern. Med. J.* 2003; **33**: 406–13.
4. Homer C, Susskind O, Alpert HR *et al.* An evaluation of an innovative multimedia educational software program for asthma management: report of a randomised controlled trial. *Pediatrics* 2000; **106**: 210–15.
5. Krishna S, Francisco BD, Balas EA *et al.* Internet-enabled interactive multimedia asthma education program: a randomised trial. *Pediatrics* 2003; **111**: 503–10.