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LETTER TO THE EDITOR

Criteria led discharge reduces length of hospital stay for children with acute asthma

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We read with interest the paper of Shanley et al. that identified factors contributing to longer lengths of stay for children admitted with acute asthma [1]. In our own hospital, an increasing demand for inpatient beds forced us to re-think how we deliver inpatient care. Utilising a clinical service redesign methodology [2], we discovered that a major root cause of increased demand for inpatient beds was delayed discharge of patients from hospital. The agreed solution was to implement a process of criteria-led discharge (CLD). CLD is a patient discharge by nursing staff that occurs under medical direction using defined criteria, to ensure a safe and timely discharge [3]. While CLD is used extensively in adult settings [4], there is little published literature on its use in paediatric services. We sought to evaluate the safety and effectiveness of CLD for children with acute asthma.

Children aged 1–16 years admitted to Princess Margaret Hospital for Children (PMH) Perth, Western Australia, with a diagnosis of acute asthma, were eligible for enrollment in a prospective case-controlled pilot study, comparing discharge by CLD with standard discharge. The decision to discharge a patient by CLD or standard discharge was made by the treating paediatrician. Children were deemed fit for discharge by CLD when requiring ≥ 3 -hourly beta-2 agonists, oxygen saturations $>92\%$ in room air for more than 4 h, they had no signs of respiratory effort and minimum wheeze.

All patients continued to have observations by nursing staff and for those allocated to CLD, once all discharge criteria were fulfilled, an authorised ward nurse discharged the patient. Authorised nurses had at least 2 years paediatric experience in an acute care setting and had attended an in-house training workshop. If discharge criteria were not met within 24 h of the last medical review, the patient required a further medical review prior to discharge by CLD. The PMH Ethics committee approved the study.

Between January 2011 and March 2013, 436 patients with acute asthma were discharged from PMH, 131 (mean age 4.5

years, 76 males) by CLD and 305 (mean age 5.5 years, 171 males) by standard practice. For patients with acute asthma, those discharged by CLD had a mean length of stay of 35.4 h (SD 21.1 h) compared with 43.4 h (SD 25.6 h) for those discharged by standard practice, $p < 0.002$. Patients discharged by CLD were more likely to be discharged outside normal working hours (5 pm–8 am) than those discharged by standard practice, 27.5% (36/131) versus 14.1% (43/305), $p < 0.001$. There was no difference in the readmission rate within 7 d between the groups, CLD 3/131 (2.3%) versus standard 8/305 (2.6%), $p = 0.97$.

We conclude that CLD appears to promote safe and timely discharge, reducing the length of hospital stay for children with acute asthma by 8 h and facilitating discharge outside normal working hours. Our study has limitations, including the lack of randomisation and the fact that we were unable to control for asthma severity. Work is ongoing at PMH to offer CLD as an option for all suitable inpatients.

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Declaration of interest

The authors report that they have no conflicts of interest.

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