

# Cost-effectiveness of home-based care of febrile neutropenia in children with cancer

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## Abstract

**INTRODUCTION** Home-based treatment of low-risk febrile neutropenia (FN) in children with cancer with oral or intravenous antibiotics is safe and effective. There are limited data on the economic impact of this model of care. We evaluated the cost-effectiveness of implementing a low-risk FN program, incorporating home-based intravenous antibiotics, in a tertiary pediatric hospital. **METHODS** A decision analytic model was constructed to compare costs and outcomes of the low-risk FN program, with usual in-hospital treatment with intravenous antibiotics. The program included a clinical decision rule to identify patients at low-risk for severe infection and home-based eligibility criteria using disease, chemotherapy and patient-level factors. Health outcomes (quality-of-life) and probabilities of FN risk classification and home-based eligibility were based on prospectively collected data. Patient-level costs were extracted from hospital records. Cost-effectiveness was expressed as the incremental cost per quality-adjusted life year (QALY). **FINDINGS** The mean healthcare cost of home-based FN treatment in low-risk patients was A\$7,765 per patient compared to A\$20,396 for in-hospital treatment (mean difference A\$12,632 (95% CI,12,496-12,767)). Overall, the low-risk FN program was the dominant strategy, being more effective (0.0011 QALY (95% CI,0.0011-0.0012)) and less costly. Results of the model were most sensitive to proportion of children eligible for home-based care program. **CONCLUSION** Compared to in-hospital FN care, the low-risk FN program is cost-effective, with savings arising from cheaper cost of caring for children at home. These savings could increase as more patients eligible for home-based care are included in the program.

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