A cost-effectiveness modelling study of strategies to reduce risk of infection following primary hip replacement based on a systematic review

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Declared competing interests of authors: none

Published July 2016
DOI: 10.3310/hta20540

Plain English summary

Reducing infection risk following primary hip replacement

Health Technology Assessment 2016; Vol. 20: No. 54
DOI: 10.3310/hta20540

NIHR Journals Library www.journalslibrary.nihr.ac.uk

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Patients who undergo total hip replacement surgery are at risk of developing a deep infection in the surgical site. Risks are low, but the consequences are potentially serious, especially for older and frail people. Patients often need costly revision surgery, which can be painful and reduces their quality of life; for some, the result is permanent disability.

A range of strategies is available to reduce the risk of infection following surgery, including injected antibiotics, antibiotic-impregnated cement to fix the artificial hip, different types of ventilation systems in operating theatres and operator body exhaust suits. These strategies can be used on their own or in combinations. This research is about the changes to cost and health benefits of different combinations of strategies designed to reduce infection risk following surgery.

Our results suggest that a combination of injected antibiotics, antibiotic-impregnated cement and conventional theatre ventilation systems without exhaust body suits is the best strategy for reducing the risk of infection following hip replacement surgery. It is also the most likely strategy to be cost-effective. The results suggest that expensive laminar airflow ventilation systems and body exhaust suits used in many operating theatres lead to higher costs and higher infection risk, and so should not be used.

Health Technology Assessment

HTA/HTA TAR

ISSN 1366-5278 (Print)

ISSN 2046-4924 (Online)

Impact factor: 4.058

Health Technology Assessment is indexed in MEDLINE, CINAHL, EMBASE, The Cochrane Library and the ISI Science Citation Index.

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

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This report

The research reported in this issue of the journal was funded by the HTA programme as project number 08/13/02. The contractual start date was in November 2009. The draft report began editorial review in August 2015 and was accepted for publication in January 2016. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA editors and publisher have tried to ensure the accuracy of the authors" report and would like to thank the reviewers for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this report.

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