

Improving services for people with infection after hip replacement: fewer operations, less delays, holistic care

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Using evidenced-based best practice guidelines on diagnosis and treatment of infection has the potential to improve treatment and care for people with infection after hip replacement.

About the research

Annually in the UK, nearly 100,000 people receive a hip replacement to treat pain and disability.

Outcomes for most people are good, but about 1 in 100 people will develop the devastating complication of deep infection in their operated hip.

Most people with infection require difficult and protracted curative ('revision') surgery with removal and replacement of the joint in two separate operations with antibiotics between surgeries.

If treated with two separate operations, people spend weeks or months with no hip joint or a temporary prosthesis.

Some surgeons in Germany and France, and increasingly in the UK, treat infection in one operation, potentially reducing the burden of surgery to patients and reducing costs.

An alternative treatment is 'debridement, antibiotics and implant retention' (known as DAIR) during which the infected tissue is removed, followed by antibiotics, but the artificial joint is not replaced. This shorter operation reduces the risks to patients but is only successful at clearing the infection for about 60% of patients.

The NIHR-funded INFORM research programme aimed to identify why some people are predisposed to infection after their hip replacement, how infection affects patients and the NHS, and evaluated different surgical treatment strategies, including their cost and effectiveness.

The subsequent INFORM-EP (Evidence into Practice) study used the best evidence from INFORM, to develop guidelines for the diagnosis and treatment of infection after hip replacement, with input from orthopaedic surgeons, GPs, rehabilitation specialists, commissioners and patients from around the UK.

Policy implications

- Any reorganisation of elective surgery clinical care pathways should include post-surgical surveillance and infection care as standard.
- Although there are costs in reorganising post-operative surveillance and infection care, these may be recouped due to reduced cost-per-patient.
- Hip replacements are mostly carried out in older adults (age 60-80), so single-stage revision has wider societal benefits in maintaining an active older population.
- Multidisciplinary team working has the potential to reduce patient anxiety and the psychosocial impact of prosthetic infection. Psychological support is currently lacking and should be included.
- For working adults, the psychosocial and economic impact of multiple surgical revisions are high. Therefore, they should be prioritised for multidisciplinary care and holistic support from local services, including referral to financial and employment support.
- Patients are most likely to present to primary care with signs of infection, so facilitating direct access between primary care and appropriate orthopaedic teams is paramount to ensure timely diagnosis and treatment.
- Recognising early signs of prosthetic infection is crucial to improving the chances of successful treatment, yet patients often receive suboptimal treatment in primary care and referrals back to the treating orthopaedic team are often delayed.
- Physiotherapists, occupational therapists, nurses, GPs and Emergency Care specialists should be educated on the signs of infection and refer onwards to appropriate orthopaedic teams.
- All discharge letters should include a request for increased vigilance due to the risk of prosthetic infection and signposting to the INFORM Guidelines.

Key findings

Over 2 years, the NIHR-funded INFORM-EP study developed and implemented evidence-based national clinical guidelines on prosthetic infection following hip replacement surgery. Researchers, orthopaedic surgeons, GPs, rehabilitation specialists, commissioners and patients from around the UK worked together using expert consensus methods.

The guidelines are based on high-quality evidence from the previous INFORM program (2014-2020) which consisted of a clinical trial, economic analysis, interviews with patients and surgeons, and evidence synthesis.

The guidelines address areas of risk, diagnosis, management, and treatment related to these post-surgical infections. They have been implemented into practice and evaluated in 12 NHS orthopaedic centres.

- Patients describe the devastating effects of joint infection during the periods of symptom onset, treatment and recovery.
- For surgeons, joint infection has a significant emotional impact, and they describe the importance of a supportive multidisciplinary team in effectively managing infection.
- The risk of joint infection is greater in men, people who are overweight and those with pre-existing health conditions.
- Important concerns for patients include the need for support and information, and the time taken to recover and re-engage in valued activities.
- Patients prefer treatments that enable them to return more quickly to normal and valued activities.
- Timely treatment of early onset or new onset prosthetic hip infection with surgical Debridement, Antibiotics and Implant Retention (DAIR) may benefit over 60% of patients.
- Recovery is delayed in people receiving revision with two operations compared with those receiving one operation. People receiving only one operation are less likely to have an intraoperative complication. However, after 18 months, the levels of pain and disability are similar.
- The average cost of inpatient and day case admissions in the 5 years following primary total hip replacement is approximately £42,000 for patients who had a revision following prosthetic infection, versus £8,000 for patients who did not need a revision.
- Treatment with one operation is around £10,000 lower than treatment with two operations, with total costs of about £36,000.



INFORM
Guidelines
QR code

Further information

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