

Circular



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Contact: Regional Office

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Distribution: Public Hospitals
Health Insurance Funds

Subject: District Nursing Fees Charges to Patients

This circular replaces circular number 25/1992, dated 18 August 1992.

The fees for visits to patients by district nurses have been amended to take effect from **1 September 1993**:

- a) The fee for patients who hold a Pensioner Health Benefits Card, Health Care Card, Health Benefits Card, or other Pharmaceutical Benefits Concession Card is \$2.10 per visit.

A maximum charge of \$27.00 per month will apply to these card holders.

- b) The fee for all other patients is \$20 per visit.

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S J DUCKETT
Director
Acute Health Services

A handwritten signature in black ink, appearing to read 'Andrejs Zamurs', is positioned above the printed name.

Andrejs Zamurs
Deputy Secretary
Aged Care

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HEALTH TECHNOLOGY ISSUES BRIEF

Number 3

August 1993

Prostheses for Total Hip Replacement

Use:	Hip joint replacement in the treatment of arthritis and other degenerative joint conditions.
Costs:	Cost of prostheses range from \$2,000 to 6,500 each for primary procedures, up to \$8,000 each for revision replacements.
Key issue:	Which prostheses give best performance, lowest risk of revision?
Conclusion:	For primary procedures, uncertain that long term outcomes are superior for higher cost prostheses.

Introduction

This brief draws on a critical review of the literature for the period 1988-1993. For the most part, unpublished company data and conference presentations have not been covered. The study is continuing and a detailed report will be prepared. Comments and criticisms are welcome.

Description and role of technology

Total hip replacement is undertaken in the treatment of osteoarthritis, rheumatoid arthritis, and other degenerative joint conditions, to relieve severe pain and improve mobility.

The natural hip has a ball and socket structure. The femoral head is the ball and the socket is the acetabulum, a cup shaped structure set into the pelvic bone. In total hip replacement, a prosthesis with a ball-shaped head and a stem fixed into the femur replaces the femoral head, and a hemispherical device of matching dimensions is fitted into the acetabulum.

In a conventional prosthesis, the femoral component is made of metal, now usually titanium alloy or cobalt-chrome, and the acetabular component is a wear-resistant cup of high density polyethylene, commonly backed with metal. The components are fixed into place with polymethyl methacrylate cement.

The procedure has been used since the 1960s. In the late 1970s, long term results of total hip replacement showed high rates of loosening, failure and revision (removal and replacement of the failed implants). In efforts to reduce failure rates, improved techniques for applying cement were developed. In addition, new types of prosthesis were developed. The most widely used of these have been cement-free porous-coated devices.

The different types of prosthesis are described in Table 1. For each type, a number of variations in prosthesis design are available.

Level of usage

Preliminary estimates indicate that around 9,500 primary and 2,000 revision procedures are performed each year in Australia. Patients aged 60 or more make up 75-80 per cent of all patients undergoing primary total hip replacement, while 40-50 per cent are 70 years or more. The percentage of older patients is even higher for revision procedures.

Costs

Cost ranges for prostheses are given in Table 1. The cost to health care of a primary total hip replacement is estimated to be in the range \$9,500-12,000 (excluding use of modular prostheses). Costs for the revision procedure are substantially higher (\$14,000-20,000). The national cost to health care of total hip replacement (not including post-discharge follow-up) is estimated to be around \$135 million annually.

Issues

Revision procedures are difficult and expensive, and results are often poor. It is desirable to maximise the life of a total hip replacement, ideally to match the lifetime of the patient, and to avoid adverse outcomes such as pain or major bone loss.

Issues are

- do modern cementing techniques reduce rates of loosening to acceptable levels?
- do cement-free or ceramic prostheses have lower loosening rates than cemented prostheses implanted with modern techniques?
- is pain associated with the prosthesis a more serious problem for the cement-free types?
- how do the different types of prosthesis rate in terms of associated bone loss ?

Conclusions

The following conclusions have been drawn from the literature review: It is emphasised that the personal experience of orthopaedic surgeons will provide an additional perspective.

- Modern cementing techniques reduce loosening rates for femoral components but problems with long term loosening of acetabular cups may not have been resolved (1-3).
- Medium term results for porous-coated devices are not superior to those for cemented prostheses using modern techniques. The results suggest that the porous devices will not have greater long term stability (4).
- Long term results for smooth press-fit devices (5-7) and prostheses with ceramic femoral heads and acetabular cups (6,8) have been poor.
- Long term data are not yet available for hybrid or hydroxyapatite-coated prostheses.
- In the short term, cemented femoral components have fewer problems with pain and disability than porous-coated devices (9,10).
- Bone loss occurs with all types of prosthesis.

In summary, it remains uncertain that in primary procedures, more expensive prostheses have any advantages over conventional cemented implants, with regard to long term outcomes and overall performance.

There is a need for:

- more high quality data on long term performance of cemented and porous-coated prostheses;
- properly conducted randomised controlled trials of hydroxyapatite-coated and any other new prostheses against cemented and porous-coated prostheses;
- detailed published data on the high cost fully modular prostheses;
- studies of outcomes of routine total hip replacements in Australian hospitals.

Table 1: Types and costs of hip prostheses

Type	Description	Status	Cost
<i>Cemented</i>	Components fixed into place with polymethyl methacrylate cement.	Developed 1960s, improved cementing techniques late 1970s. Still very widely used	\$2,000-3,000
<i>Ceramic</i>	Prostheses with ceramic heads and/or acetabular cups. Aim is to reduce wear. Cemented and cement-free types	Developed 1970s, more recent types have ceramic heads only	4,000-4,500 (est)
<i>Press-fit</i>	Cement-free, designed to achieve fixation by close geometric fit only	Developed late 1970s, obsolete	na
<i>Porous-coated</i>	Cement-free, surfaces adjacent to bone coated with beads or mesh. The aim is to achieve fixation by bone ingrowth into the pores in the surface coating.	Developed early 1980s, widely used	3,500-4,000
<i>Hydroxyapatite-coated</i>	Cement-free, surfaces adjacent to bone coated with hydroxyapatite, believed to promote bone growth and form chemical bonds with the bone. It may be over a porous surface.	Developed late 1980s, early stages routine use	4,100
<i>Hybrid</i>	Cemented femoral component used with uncemented porous-coated acetabular cup. Aim is to reduce loosening of the acetabular component.	Developed 1980s, increasing routine use	3,000-4,000 (est)
<i>Fully modular</i>	Cemented, or cement-free with porous or hydroxyapatite coatings. Modular components (such as stem, proximal sleeve, head) available in range of sizes and types, assembled intraoperatively to give best fit. Special designs for revision prostheses.	Developed late 1980s, increasing routine use	6,000-6,500 (primary) 7,000-8,000 (revision)

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