

## Financing implants and prostheses in the midst of budgetary constraints

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### Abstract

Budgetary constraints for the purchase of operative implants and prostheses stimulated a strategy which involved the purchase of less costly alternatives, which although manufactured in developing countries, met specifications. To minimize costs through high turnover, implants and prostheses were purchased from a few reliable companies and its agents. In addition to almost doubling the threshold from RM400 to RM750, over which the patient had to pay for the implant or prostheses, the strategy enabled staff to be quickly become familiar with instrumentation and procedure through repetitive operative experience using the same system. In addition, the practice of acquiring infrequently used implants and prostheses only when required prevented the holding of massive inventories of these expensive devices which may perhaps not be used.

**Key words:** financing, implants, prostheses, budgetary constraints

### Introduction

The provision of orthopaedic and trauma services involves the substantial use of operative implants and prostheses and their accompanying expense. When budgetary constraints resulted in insufficient finances, a strategy had to be developed to ensure that as many patients as possible could be treated appropriately. The costs of expensive implants and prostheses had to be passed on, at least partially, to patients who could afford them, especially those who desired implants and prostheses manufactured and marketed by established companies. This short communication illustrates how the purchase of implants and prostheses were financed through a transparent strategy which depended on the patients' ability and willingness to pay for them.

### Stratification of Charges

The following charges were applied:

(i) Patients who required emergency procedures were not required to pay for implants used.  
(ii) Commonly used implants and prostheses such as plates, screws, K-nails, K-wires, Cerlage wires, washers, cannulated screws, Rush nails, bone staplers, skin staplers, Steinman pins, conventional pins) were supplied free. Vertebroplasty implants and mesh, and bone cement were also supplied free to poor patients. External, pinless, hybrid, and Hoffman fixators as well as limb lengthening devices were provided on loan without any charges.

(iii) For elective procedures requiring dynamic hip screws and hip hemi arthroplasty prostheses (Austin Moore femoral prosthesis, Thompson femoral prosthesis, dynamic hip screws), no charges were incurred when the patients accepted the use of low priced implants or prostheses manufactured in developing countries (<RM750.00). Patients however had the option of choosing to have and paying for dynamic hip screws and hemi hip arthroplasty implants and prostheses manufactured and marketed by established companies which were priced at more than RM750.00

(iv) Prostheses incurring payment included all those which were priced more than RM 750 or those that are not commonly used and therefore not held in stock. These included joint replacement prostheses (hip, knee, shoulder, elbow and wrist), hemi-shoulder replacement prostheses, uni-knee replacement prostheses, interlocking nails (reconstruction nails, Gamma long and short nails), spinal implants, tumour implants, joint replacement revision prostheses, arthroscopy implants and accessories, mesh, cable systems, Ilizarov fixators, vertebroplasty sets, bone allografts, specialized plates and screws (e.g. pelvic plates, titanium hand plates and screws), flexible paediatric nails, antibiotic impregnated cement, gentamicin beads, Halo systems, customised implants, and bioabsorbable implants and pins.

Under this scheme of charges, the proportion of patients who were not charged [categories (i)

and ii)], those who had the option of payment for more expensive items (iii), and those who were charged (iv) were 70%, 10% and 20% respectively.

#### **How payment was collected.**

There were no cash transactions. After being informed of, and having agreed with the treatment strategy, the patients furnished a bankers draft or postal order drawn in favour of the company supplying the implant or prosthesis. This constituted the deposit for which an interim invoice and temporary receipt was issued. After having undergone and recovered from the operative procedure, the patient was informed about the required procedure and the implants or prostheses which were used. Postoperative radiographs were shown. The final charge incurred was determined. A final invoice was issued. If any refund was due, this was paid and a final receipt was issued. No Ministry of Health staff was directly involved in the transactions. The transactions were undertaken by the staff of the companies marketing the implants and prostheses who dealt directly with the patient or their representatives. An implant and prosthesis procurement committee consisting of medical officers, medical assistants and nurses was established to ensure that fair dealing and transparency occurred, costs involved were fair and true to market prices, and that transactions were ethical.

#### **Discussion**

Rationing healthcare is high on the policy agenda in many countries as demand for care outstrips supply (Hunter, 1993). Managers and Clinicians need to collaborate on decisions on how resources are allocated (Keen et al, 1993). Prior to 1997, the modest allocation for the purchase of orthopaedic operative implants and prosthesis was sufficient only for basic and commonly used devices. When operative implants and prosthesis costing more than RM400 were required, the patient had to pay for them. During the years following the South East Asian Economic Crisis and subsequent economic slowdown (1998 to 2000) allocations for operative implants and prosthesis were drastically reduced. At the same time, there was an increased number of patients presenting for treatment at Ministry of Health Hospitals. As a result a strategy had to be formulated for the purchase of operative implants and prosthesis.

The predicament and possible strategies were discussed with the Division of Planning and Development, Ministry of Health, Malaysia which agreed with the principle of patients paying for operative implants and prosthesis if they could afford it. Patients who declared that they could not afford these payments were referred to the Hospital Social Welfare Department for assessment of their need for financial aid.

To decrease costs, implants and prosthesis which were manufactured in developing countries, and marketed at a fraction of the cost of those manufactured in the developed countries, were sourced and utilized. All these "generic" implants and prosthesis had Food and Drug Administration (USA) approval as well as approval by licensing bodies in the European Economic Community (EEC). They have been used for almost two years now, without any major problems.

In order to further minimize costs by ensuring low costs from high turnover, implants and prosthesis were procured where possible, from a few reliable companies and its affiliated agents which provided a no frills, efficient service. In addition to minimizing costs, this strategy ensured that operative procedures and the mechanical instrumentation were standardized. The repetitive performing of these standardised procedures enabled operating theatre scrub staff, surgeons and trainees to become familiar with the procedures. This enabled the operative procedures to be performed in a relatively shorter time and with minimum intraoperative technical difficulties, retrograde manoeuvres and subsequent technical complications. This is consistent with the observations of Badger (1999) that some areas of quality in healthcare are amenable to improvement despite budgetary constraints.

In the year 2001, Ministry of Health allocations for implants and prosthesis resumed on a modest scale but were still insufficient to meet all the requirements. Also the number of patients and items of service provided had markedly increased. Thus the strategy developed in the milieu of budgetary constraints had to be continued.

As a result of the budgetary constraints and the strategy which was established and practiced, the previous pre-1997 threshold of RM400.00 (over which the costs of implants and prostheses were passed on to patients), had almost doubled to RM750.00. Another benefit of the policy was



the inculcation of an attitude to only procure expensive and/or infrequently used implants and prosthesis only when required. This avoided the holding of massive inventories which may never be used because when the individuals responsible for their procurement moved on, the replacement surgeons may prefer other, perhaps more sophisticated implants and prostheses.

The decrease in budgetary allocation for orthopaedic operative implants and prostheses stimulated the need for a strategy to continue their purchase. This strategy involved the procurement of less costly implants and prostheses which were manufactured in developing countries as well as the reduction of costs through increased turnover by acquiring implants and prostheses, where possible, from a few reliable companies. In addition to fulfilling its original objective, the strategy also streamlined operative procedures and enabled surgeons, operating room scrub staff and trainees to quickly become familiar with the operative instrumentation and procedure through repetitive performance of the procedure using the same

system. It also inculcated the practice of implant and prostheses procurement only when required, thereby avoiding the holding of massive inventories which may never be used.

There is a substantial repertoire of policy tools which can be used for rationing in health care. These include rationing the intensity and magnitude of treatment and instituting the earlier termination of treatment (Klein, 1994). The strategy where part of treatment costs are passed on to the user (if able to and willing to pay) may serve as an additional useful option.

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