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Prosthesis pricing needs fundamental reform

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Stephen Duckett

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1 Introduction

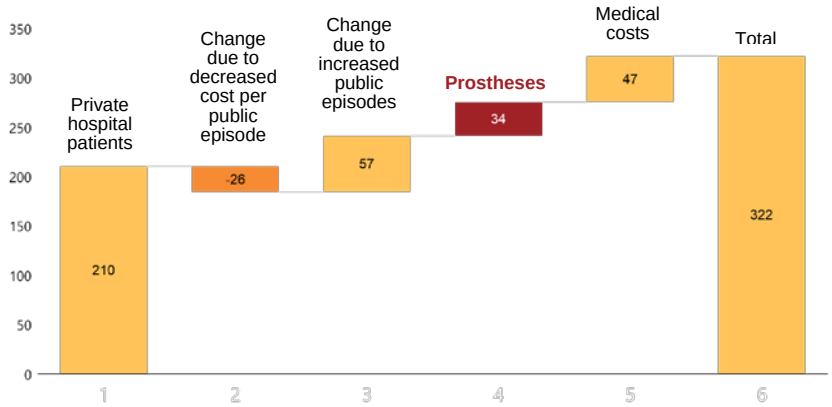
Prostheses accounted for more than 10 per cent of the real growth in benefit outlays by private health insurance in the past decade (Figure 1). Australian prosthesis prices are high by international standards,[1] and concern with prosthesis pricing led to a recent Senate inquiry.[2] Although approaches to prosthesis pricing are improving over time, particularly following the Senate Inquiry, they still fall well short of economic rationality.

There are significant differences in the average prosthesis costs across surgeons,[3] and surgeons' choices do not necessarily take into account the quality of the prostheses, at least as measured by the revision rate.

As Nobel Laureate Oliver Williamson has identified, procurement can take place either through markets, regulated by prices, or through hierarchies, regulated by rules.[4] The contemporary Australian approach to prostheses is more like the latter than the former, exemplified by a spreadsheet of regulated prices of more than 1,000 pages, including more than 10,000 centrally-determined prices.[5] It is redolent of Soviet-era central planning at its worst.

Figure 1: Growth in prosthesis costs accounted for more than 10% of the growth in benefits in past decade

Real change ($) in benefit per member, 2008-09 to 2018-19



Sources: Grattan analysis, APRA private health insurance statistics.

The current prosthesis pricing approach incorporates all the wrong incentives, creates arbitrage opportunities, encourages rent seeking, and leads to poor outcomes for patients, health insurance members and taxpayers. It does nothing to improve efficiency. It is, in short, a protection racket.

[1] Private Healthcare Australia (2015); although international price comparisons are still methodologically difficult: Koechlin, *et al.* (2017).
[2] Senate. Community Affairs References Committee (2017).
[3] Royal Australasian College of Surgeons and Medibank (2016).
[4] Williamson (1975).
[5] https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-privatehealth-prostheseslist.htm, accessed 22 July 2019.

There are important short-term fixes which would be useful. But prosthesis payment should be dramatically transformed. We need to address this fundamental question: why are the prices that health insurers have to pay for prostheses regulated at all?

2 Tidy-up existing regulation

A modest reform is to revisit the contemporary approach to prosthesis pricing to modernise its approach and to incorporate innovations from pricing of other medical interventions and treatments.

Pricing of pharmaceuticals, for example, is governed by a system of domestic price disclosure. It has been successful in driving down the price of pharmaceuticals by requiring manufacturers and distributors to declare the prices they actually charge pharmacies.[6] Hidden discounts, which might otherwise have been available only to selected pharmacies, are required to be disclosed and this information is then used to set the price that the government pays for the medication, thus ensuring that government and the Pharmaceutical Benefits Scheme accrue the benefit of these discounts. A similar process could be applied to prosthesis pricing.

The principal weakness of the current pharmaceutical price disclosure approach is that it allows only government to accrue the benefit of domestic price discounting. Prices paid in Australia for pharmaceuticals are above international comparators, and so international benchmarking should also be used in pharmaceutical pricing. Similarly, Australian prosthesis prices are above international benchmarks and so again, international benchmarking should be used in national prosthesis pricing.

The Pharmaceutical Benefits Scheme also has a system of 'Therapeutic Group Premiums'. Under this policy, prices for pharmaceuticals with similar therapeutic effect are compared, and where there appears to be no incremental benefit within the therapeutic group, the government price is set at the benchmark for that therapeutic group for all medications in the group.[7] In most cases manufacturers do not attempt to maintain a price premium when there is no apparent benefit to the patient.

This policy of therapeutic group premiums has been poorly implemented in pharmaceuticals.[8] But, properly implemented, it too could be applied to prosthesis pricing. Thus for example there could be a benchmark price for hip prostheses, and all other hip prostheses could be priced relative to that benchmark price.

A version of this policy could be to implement a standard prosthesis price for each relevant Diagnosis Related Group (DRG). So for example, rather than having numerous

[6] I have criticised this approach, primarily on the grounds that it has been slow to achieve savings, see Duckett*, et al.* (2013), Duckett*, et al.* (2013), Duckett and Banerjee (2017).

[7] Many OECD countries have similar policies Wettstein and Boes (2019)

[8] Duckett and Breadon (2015).

separate prices for hip prostheses, there could be a standard prosthesis price for the two hip replacement DRGs.

State public hospitals appear to pay less for prostheses as they do for pharmaceuticals, compared to the prosthesis list and the Pharmaceutical Benefits Scheme.[9] This may in part be due to collective purchasing arrangements. New Zealand has recently expanded its PHARMAC arrangements to medical devices,[10] and a similar centralised purchasing arrangement could also be used in Australia to drive prices down.

[9] Private Healthcare Australia (2015); Senate. Community Affairs References Committee (2017).

[10] Sumner (2015).

3 Immediate reform: Lifetime pricing

These approaches described above are all based on tidying up existing regulatory arrangements for prosthesis pricing within its own frame – that is, looking at prices for each relevant operation, without taking to account information about the overall performance of the prosthesis.

A further incremental change to the prosthesis arrangements could be to use information about the effectiveness of the prosthesis in setting prices.

Information contained in procedure registries – such as the joint registry – could be used to establish information about the lifetime cost effectiveness of prostheses.[11] This is well established in the case of hip and knee prostheses, but such an arrangement could be applied outside orthopaedics.[12]

Under this approach the price to be paid for a prosthesis would be adjusted to take account of the likelihood that a revision might be required. From the work of the Australian and international joint registries and health insurers, the latter together with the College of Surgeons, we know that there is significant variation in revision rates for prostheses.[13] The cost of a revision, including the cost of the hospital admission, is many times the cost of the initial prosthesis. Incorporating revision risk into initial pricing would start to send signals about the importance of long-term costs.

Interestingly at least one United States health system has introduced a lifetime hip and knee guarantee, where the hospital group bears the full cost of any revision.[14] This is facilitated by the alignment of incentives of doctors, hospital and health plan involved in the system, but some form of accountability for revision rates should be on the agenda in Australia too.

[11] Fawsitt*, et al.* (2019), Davies*, et al.* (2010).
[12] About half of the items with regulated prices in the prosthesis list are orthopaedic.
[13] Royal Australasian College of Surgeons and Medibank (2016); Australian Orthopaedic Association National Joint Replacement Registry (2018). http://www.odep.org.uk/products.aspx

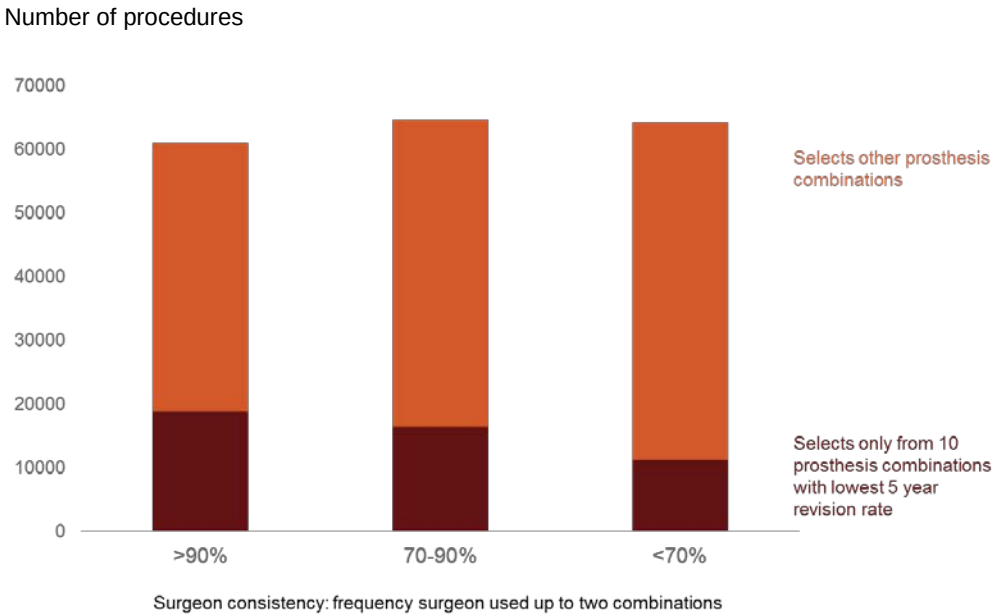
[14] https://www.geisinger.org/patient-care/conditions-treatments-specialty/2019/03/06/21/11/lifetime-hip-and-knee; As part of a wider approach to bundling: Slotkin*, et al.* (2017).

About three quarters of prostheses chosen by orthopaedic surgeons are not among the top 10 in terms of quality as measured by revision rates.[15] It is unlikely that those surgeons have fully informed their patients of the choices that they have made on the patients' behalf and the risks that they have imposed on their patients. This ought to be seen as a breach of medical ethics.[16] The Government plan for a fee transparency website[17] should incorporate transparency about surgeons' prosthesis choice too.

Any of the models for pricing outlined in terms of the tidy up approach to regulation could be applied to lifetime pricing of prostheses.

Life-time pricing is a substantial improvement on existing pricing models, and one which should be prioritised for early implementation.

Figure 2: **Most hip prostheses are not chosen from the best performing**



Source: Australian Orthopaedic Association National Joint Replacement Registry (2017), Table SV3

[15] Australian Orthopaedic Association National Joint Replacement Registry (2017), table SV3.

[16] Duckett (2018).

[17] Ministerial Advisory Committee on Out-of-Pocket Costs (2018)

4 Fundamental reform

Tidying up prosthesis pricing, even introducing lifetime pricing, will still leave in place inefficient and inappropriate incentives and prices. A fundamental principle of the working of the market is that the purchaser expects to accrue utility from their purchase. This is not how prosthesis pricing works. The surgeon is the one who chooses the prosthesis; in the private market it is a private hospital that actually purchases the prosthesis; the private health insurer pays for the prosthesis; but it is the patient who wears the cost of any failure of the prosthesis. This creates an agency problem and is almost guaranteed to lead to inefficiency.

A more fundamental reform needs to erase the excessive red tape and regulation of prosthesis pricing. However, such a fundamental reform can only take place alongside broader reform to health insurance arrangements. As I have argued elsewhere, these broader reforms should be on the public policy agenda.

There is a one-to-one relationship between a prosthesis and a DRG. Every hip replacement has a prosthesis. There are specific DRGs for pacemaker insertion. Cataract operations require lenses. In these circumstances, efficient pricing would bundle the cost of the prosthesis into a DRG payment.

In the public sector, DRG payment has been the currency in Victoria for more than 25 years,[18] and implemented nationally for almost a decade. DRG payment at a national efficient price has driven efficiency in the public hospitals and slowed growth in the cost of admissions. The same rigour should apply in the private sector.

If DRG payment was introduced as the fundamental basis of private hospital payment it would reduce the myriad of different payment arrangements that currently apply across the sector, with those different pricing arrangements creating an administrative burden and inefficiency in private hospital operations.[19] It would still allow innovative pricing and pay for performance models.

Although the evidence about pay for performance is weak,[20] moderate steps to implement better pricing, including better collection of information, should be part of a pricing reform agenda. The English National Health Service, for example, has introduced best practice tariffs, including for hip

[18] Duckett (1995).

[19] There may need to be some changes in the definitions of DRGs, to recognise the somewhat different case mix of private hospitals – a smaller proportion of emergency cases and the different age profile of patients, which might result in a different cost structure e.g. more cementless compared to cemented hip prostheses.

[20] Mathes*, et al.* (2019); Kristensen (2017).

replacements, which reward services that have better patient-reported outcomes.[21]

Hospitals where the initial surgery is performed should bear the cost of future revisions – introducing a lifetime guarantee.

DRG payment would allow for the prosthesis costs to be bundled into the hospital payment. Private hospitals would be required to disclose to patients if they are up for any out-of-pocket cost associated with the prosthesis, and what alternative prostheses might be available which involve no out-of-pocket cost, or which are less likely to require a revision. This will help to drive up quality.

Private hospitals – which purchase the prosthesis – would then have an incentive to purchase efficiently, and to ensure that their surgeons select better-performing prostheses.[22]

[21] NHS England and NHS Improvement (2019).

[22] This should be accompanied by strategies to increase accountability for revision rates too.

5 Conclusion

Prosthesis pricing in Australia is stuck in an out-dated regulatory approach. It is not providing best value to taxpayers, health insurance members, or patients. There are ways to improve the existing regulation, and some of these approaches have been outlined in this paper. But they should be seen only as inadequate patch-ups of a rickety system. That rickety system deserves to be consigned to the dustbin of history and replaced by a fundamentally different approach to paying for surgical care which bundles prosthesis costs into a single price.

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