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COMMENT

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Who would benefit from average value-based pricing?

There has been debate over the appropriate basis by which decisions relating to the adoption of health technologies should be made in the presence of heterogeneity in outcomes across patients. Stratified cost-effectiveness analysis (SCEA) was originally proposed as a method of determining the optimal patient subgroups or strata for which treatments should be reimbursed (Coyle, Buxton, & O'Brien, 2003). SCEA is based on the recognition that, in the presence of heterogeneity, incremental costs and effects for a given treatment may vary in different patient subgroups or strata. Consequently, for some strata, the treatment may meet a recognised threshold of cost-effectiveness, but for others, it may not. Accordingly, any discussions over potential price reductions can be linked to decisions relating to coverage for a broader patient population. Marginal value-based pricing (MVBP) is essentially an operationalisation of the principles of SCEA in that manufacturers can be offered a range of potential prices that a payer would be willing to pay for their product with the caveat that a request by the manufacturer for higher prices would lead to a more restrictive patient population having access to the technology (Claxton et al., 2008). As Claxton (2007) points out, the adoption of MVBP will allow a sharing of the surplus derived from its implementation between the producer and the consumer and thus a sharing of the risk.

In an article in this issue, Levaggi and Pertile consider the impact of average value-based pricing (AVBP) (Levaggi & Pertile, 2020). Under AVBP, price is set such that the average incremental costs and effects of the new treatment over a fraction (not necessarily 1) of the patient population will meet the threshold of cost-effectiveness. This situation will mean that, under AVBP, treatments will be funded in strata where they meet the threshold of cost-effectiveness and in strata where they do not. Under AVBP, all surplus derived from the transaction will be left to the producer. Giving all the surplus to the producer is argued to represent dynamic efficiency given the rational behaviour of profit-maximising firms.

These arguments presented by Levaggi and Pertile (2020) hinge on a series of propositions. The first two propositions can be seen to be integral to the arguments within the paper and require careful consideration.

Proposition 1 states that 'With Marginal Value-Based Prices, the number of patients treated is inefficiently low, unless effectiveness is sufficiently homogeneous across the eligible population'; Proposition 2 states that 'With prices equal to the average value for the population treated, the number of patients treated is efficient, irrespective of the degree of heterogeneity'. The obvious question to ask when considering these propositions is to whose perspective is the number of patients treated inefficient. If under AVBP pricing, price is set such that the incremental cost per health gain for the whole population, based on the weighted average of results by patient strata, is equivalent to the current efficient provision of health care, then treating patients with the new treatment is neither an improvement nor a reduction in the overall health of the population. Thus, from the perspective of a decision maker, such an approach does nothing to achieve an underlying goal of maximisation of population health.

Furthermore, the appropriate price based on AVBP is subject to the fraction of the population within each strata. Given that the interaction between the manufacturer and the payer is similar to the characteristics of a bilateral monopsony where gaming becomes expected, there will be an incentive for the manufacturer to distort the proportions expected in each strata to allow broader coverage for their technology, resulting in a decrease in population health. Thus, AVBP is not necessarily equivalent as suggested by Levaggi and Pertile (2020) to having strata-specific pricing, as this will only be the case in the situation where the proportion of potential patients within each strata are known.

Thus, under the scenario covered by the first two propositions, AVBP in reality leaves a decision maker with two options: to continue the current allocation of constrained resources or to choose a new allocation of resources where there is greater uncertainty with, at best, no increase in the overall health of the population but with the potential for a reduction in health.

Levaggi and Pertile (2020) present two further propositions which provide the argument that reimbursement by AVBP would be dynamically efficient in that all rent would be allocated to the producer, thus leading to optimal investment in R&D and leading to future health gains. Two caveats need to be raised.

First, even with the assumption that the proportion of patients falling into each strata are known, under AVBP, all decisions to fund new technologies will lead to the same conclusion as that presented by the authors: that treatments funded by adopting AVBP will not increase the overall health of the population. Consequently, future new technologies will simply lead to the same level of population health. Hence, the implementation of AVBP actually means no long-term gains in population health.

A further concern with the argument provided by the authors is the lack of consideration of what the implications are when the payer adopts AVBP for reimbursement decisions. In a system with a constrained budget, under the most optimal circumstances, AVBP will not lead to an increase in population health but will merely lead to a change in which technologies are reimbursed. Although the authors argue that AVBP will enhance dynamic efficiency, that need not be the case. The reallocation of constrained resources will simply mean that rent that was previously given to one set of health producers will now be reallocated to another. Whether or not this approach will truly increase commitment to R&D is clearly uncertain.

In conclusion, adoption of AVBP may lead to greater benefits in the patient population considered, but it will not increase population health even when dynamic efficiency is considered. Thus, adoption of AVBP appears to be solely of benefit to the manufacturer and possibly the specific patient population considered but will not benefit the population as a whole.

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