Trade-off Analysis: An Extension of Threshold Pricing Analysis

Deirdre M. Mladsi, Jonathan B. Graham, Naoko A. Ronquest

RTI Health Solutions, Research Triangle Park, NC, United States

BACKGROUND

Investment decisions are made on the basis of whether a new drug is expected to meet or exceed specific targets defined by payers. To do this requires a threshold pricing model that first identifies the total costs associated with the new drug and then calculates the incremental value. As a result, a large number of studies have been published using threshold pricing models. The models estimate the maximum value-based price that would be acceptable to payers and then determine whether this price is competitive with the expected costs of the new product.

In our work, we developed a simple decision-analytic model estimating maximum value-based price. We examined the influence of product attributes on calculations of return-on-investment. The model showed that the threshold pricing model is based on efficacy, safety, and tolerability required to reach or exceed expectations. Table 2 presents these hypothetical trade-offs for the new product given that the maximum value-based price is used (duration of use is adjusted to reach or exceed expectations). Table 2 also identifies the missed price opportunity.

METHODS

Using a hypothetical new product early in clinical development, we developed a threshold pricing model that produced an estimate of the maximum value-based price the new product could achieve. To do this, we estimated the research and development costs associated with the new product. We then used the threshold pricing model to estimate the return-on-investment for the new product.

The threshold pricing model was used to identify the maximum value-based price that would be acceptable to payers. The model showed that the threshold pricing model is based on efficacy, safety, and tolerability required to reach or exceed expectations. Table 2 presents these hypothetical trade-offs for the new product given that the maximum value-based price is used (duration of use is adjusted to reach or exceed expectations). Table 2 also identifies the missed price opportunity.

RESULTS

Table 2. Hypothetical Trade-Offs and Price for New Product

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Price Impact</th>
<th>Missing Value Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Case</td>
<td>$20.00</td>
<td>$5.00</td>
</tr>
<tr>
<td>Scenario 1</td>
<td>$23.00</td>
<td>$7.00</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>$25.00</td>
<td>$9.00</td>
</tr>
</tbody>
</table>

Figure 1. Influence of Probability of Hospitalization on Value-Based Price of New Product

- Equation 1: The threshold can be based on pricing analysis. It is possible to evaluate the trade-offs among the different attributes. The threshold can be based on the incremental value of the new product over the base case. The threshold can be based on the incremental value of the new product over the base case and the maximum value-based price. The threshold can be based on the incremental value of the new product over the base case.

Figure 2. Trade-off Analysis: An Extension of Threshold Pricing Analysis

- Equation 2: The threshold can be based on pricing analysis. It is possible to evaluate the trade-offs among the different attributes. The threshold can be based on the incremental value of the new product over the base case. The threshold can be based on the incremental value of the new product over the base case and the maximum value-based price. The threshold can be based on the incremental value of the new product over the base case.

Figure 3. Sample Comparison of Total Costs for Two Different Products

- Equation 3: The threshold can be based on pricing analysis. It is possible to evaluate the trade-offs among the different attributes. The threshold can be based on the incremental value of the new product over the base case. The threshold can be based on the incremental value of the new product over the base case and the maximum value-based price. The threshold can be based on the incremental value of the new product over the base case.

CONCLUSIONS

- An analytical tool to evaluate the value of a new product before it is approved by a regulatory agency. It is possible to evaluate the trade-offs among the different attributes. The threshold can be based on the incremental value of the new product over the base case. The threshold can be based on the incremental value of the new product over the base case and the maximum value-based price. The threshold can be based on the incremental value of the new product over the base case.

CONTACT INFORMATION

Deirdre M. Mladsi, Jonathan B. Graham, Naoko A. Ronquest
RTI Health Solutions, Research Triangle Park, NC, United States

PRESENTED AT: ISPOR 17th Annual International Meeting

Figure 4. Trade-off Analysis: An Extension of Threshold Pricing Analysis

- Equation 2: The threshold can be based on pricing analysis. It is possible to evaluate the trade-offs among the different attributes. The threshold can be based on the incremental value of the new product over the base case. The threshold can be based on the incremental value of the new product over the base case and the maximum value-based price. The threshold can be based on the incremental value of the new product over the base case.

Figure 5. Sample Comparison of Total Costs for Two Different Products

- Equation 3: The threshold can be based on pricing analysis. It is possible to evaluate the trade-offs among the different attributes. The threshold can be based on the incremental value of the new product over the base case. The threshold can be based on the incremental value of the new product over the base case and the maximum value-based price. The threshold can be based on the incremental value of the new product over the base case.