The impact of reimbursement body requirements on portfolio management, pipeline design and investment prioritisation in healthcare innovation.

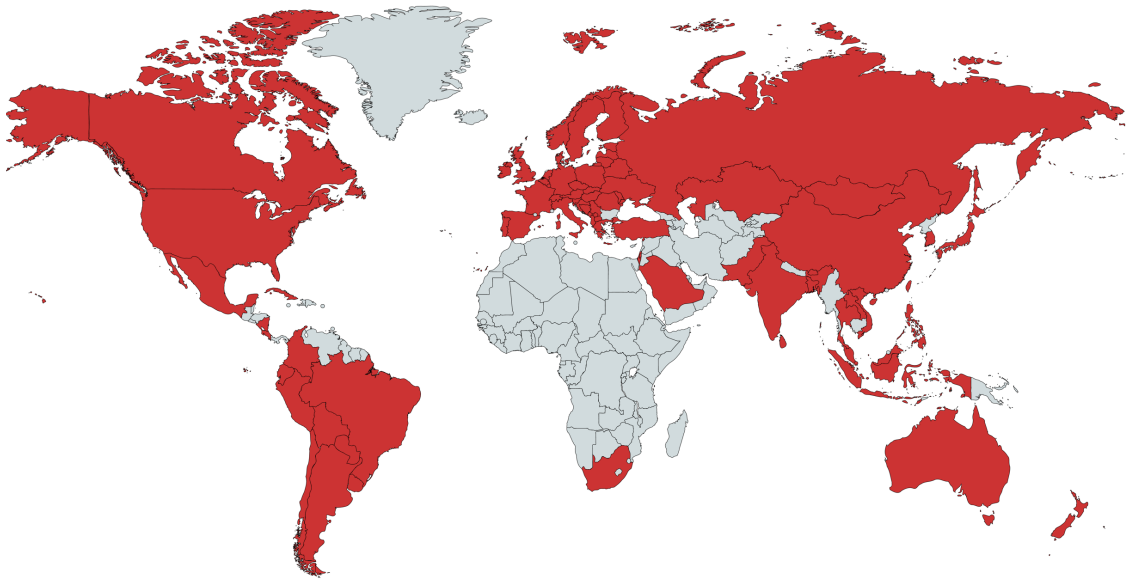
Jonathan Dando and Maximilian Lebmeier

In our recent research and publications, we have underlined the necessity to integrate and link the requirements of the data needed for Health Technology Assessments (HTA), why doing so reduces the impact of long term aggregate risk and how payers and reimbursement authorities use the information and evidence from HTA reports to decide:

- If an innovation should be reimbursed
- How much should be paid for it
- The specific patient population that the innovation can be used for
- The conditions under which the innovation should be used compared to the standard of care (note this often means a restricted or limited reimbursement)
- Where the innovation should be used in the approved patient care pathway

In this briefing we address the financial ramifications and illustrate how the decisions of these bodies can impact valuations and potential returns. And why the concepts and components that influence the above points, need to be integrated at a basal level into clinical trial design, and at an optimised level to the whole product lifecycle, from conceptualisation of the innovation to market release.

Overview of countries using HTAs (marked red)



Concerns regarding the growing gap between demand for health services and technologies and available resources has long created the need to regulate healthcare expenditure, and governments have increasingly introduced formal systems to assess the value for money of healthcare technologies coming to market.

The predominant processes to do so are Health Technology Assessments (HTAs).

Achieving reimbursement and market access requires meeting the value needs of healthcare payers around the globe who are appraising the clinical and economic evidence to determine whether the new technology should be paid for and in which population and at which price.

The introduction of the National Institute for Health and Care Excellence (NICE) in 1999 in England significantly contributed to the globalisation of HTAs. Nearly every country now has an HTA organisation in place to help payers determine the value of new healthcare technologies.

Value assessments conducted by these authorities, consist of compiling and analysing the evidence to show the health and economic benefits of a product, compared to the standard of care, are sufficient to justify the price desired. The evidence requirements of HTA bodies therefore are going far beyond those of regulatory authorities; more and different evidence is needed.

- If a company doesn't submit to HTA organisations they are not able to recommend the product and thus reimbursement is highly unlikely with a potential negative impact in other countries.
- Negative reimbursement decisions by payers hinder market access substantially, and in turn delays, or can impact adversely on sales and return on investment.
- Unwanted (by the company) niching into sub-groups will lead to no reimbursement for parts of the license and thus to reductions in sales and a potential negative impact in other countries.
- Delays in reimbursement decision-making (e.g. because of insufficient data and / or pricing, et.) can lead to substantial delays in a new product gaining market access, uptake and sales.
- Positive recommendations however will lead to payers to fund the product, uptake and sales and potential positive impact in other countries.

To demonstrate why HTA assessments are pivotal, in this briefing we are going to use the development of a cardiovascular (CVD) medical innovation as a model

In this best-case model, market approval has been obtained in one major geography (SAM), and we choose to apply an optimistic hypothesis that there is only one reimbursement agency and stakeholder that needs to have their priorities addressed before sales are obtained.

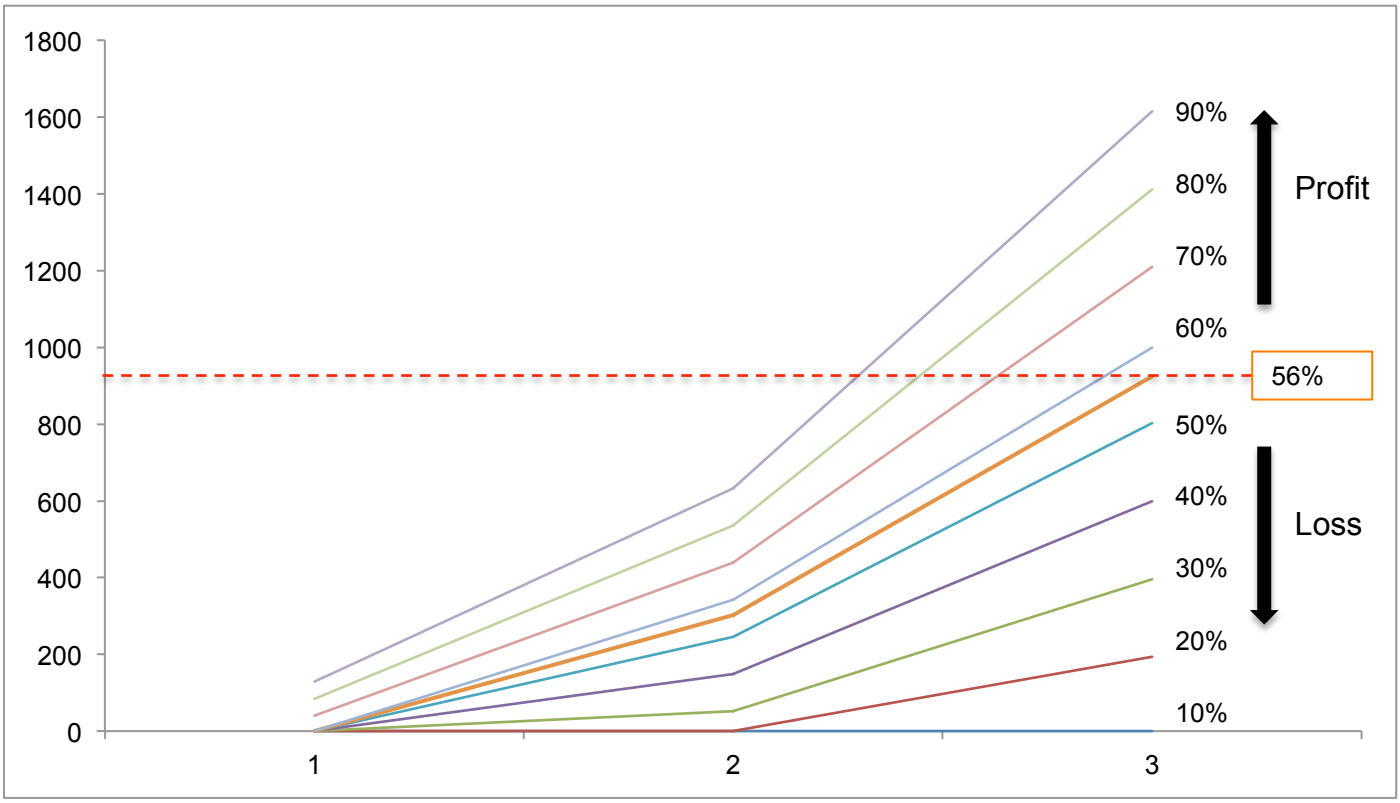
Independent of this hypothesis, R&D costs are going to be around $2.6 Bn*, manufacturing and SG&A costs (which are known and can be identified in most companies annual financial reports, equate to nearly 65% of the revenue) are around $3.4 Bn, and follow on costs plus additional WACC, being another $0.56 Bn. Therefore, to reach a balance of zero on this product (its baseline) i.e. no loss, while competing against existing standards of care, it will need to generate $6.1 Bn in lifetime sales, this is the mSOM (the minimal SOM, and the baseline target terminal market value).

(This value goes up if multiple geographies and reimbursement agencies have to be satisfied as each has its own defined reimbursable care pathway, approaches to performing HTA and the accepted standard of care*)

In CVD, clinical trials are normally long, and require extensive monitoring and follow up. We know the 10-year average indication specific and clinical trial phase specific success rates of innovations in CVD development, while obtaining unlimited reimbursement approval for what the innovation was designed for happens on average only 56% of the time.

If we insert these values into an rNPV calculation to determine the value of the innovation during its development and whether it is worth investing in, we obtain the following.

Indication specific rNPV with varying reimbursement probabilities (value in millions of USD)



The baseline (zero loss) valuation is indicated by the horizontal dotted line.

If you can increase the possibility of unrestricted/unlimited reimbursement then returns can be made, if you are below the average then the innovation is making a loss.

In real-life, SOM market sizes are significantly over-estimated, abbreviated costs and generic success rates are used, and HTA requirements and reimbursement agency policies are often considered at the last moment; combined this goes a long way to explaining why present ROI's in the industry run at 1.8%.

Budget constraints mean that health agencies are becoming increasingly stringent in cost-benefit and cost-effectiveness assessments of presented data, which means that data has to be more advanced, more robust and more meaningful to HTA authorities and payers.

If your innovation reimbursement falls into the 40% bracket, you have likely lost over $1 Bn.

If you integrate in the evidence requirements for reimbursement in your clinical trial design and other evidence generation alongside and beyond clinical trials, so that you enter the 80% bracket, then over $2 Bn in profit is likely to be made, which can also be beneficially impacted by R&D tax credits, with the phase 3 valuations being double the baseline and the phase 2 valuations nearly triple the baseline.

In the 80% bracket the phase 1 valuation is close to 20 fold higher than the baseline.

To be able to obtain this value at phase 1, the key concepts and evidence requirements for the HTA also need to be integrated into the very earliest steps of innovation design and through its experimental and preclinical validation. Furthermore, HTA considerations need to be included and HTA scientific advice into the trials sought (either via HTA experts and / or through official procedures such as the EMA / HTA scientific advice or NICE Scientific advice, etc.) at Phase 2 trial planning the very latest.

Remembering that this is the best case scenario, and returning to annual report analysis, obtaining $6.1 Bn in annual sales typically requires multiple market penetrance which means that the strategic design of your portfolio, how and when you invest in it, where and how you develop the different components of it, necessitates a radical rethink of all the potential different markets, and all associated stakeholders in the global marketplace for your innovation.

The reality indicates that for innovative enterprises they need implementable strategies, from the very first decision to select an innovation to invest in and develop, that will make their pipeline significantly more valuable and internationally market relevant and driven; stretching from early stage experimental design through to market release.

In this example, we have used CVD as the model, but have also performed the same analyses for both frequent and rare diseases, as well as for other health focused solutions, demonstrating the necessity to bring this stakeholders requirement into your decision making as early as possible.

The opportunity:

Innovators in the field; investment funds and investors of all categories, charities, entrepreneurs, venture philanthropists, regional & national agencies, the whole C-Suite within start-up companies to established incumbents need to critically consider re-designing their approaches:

- At a minimum integrate market geography specific HTA relevant evidence requirements into your phase 2 design.
- Optimally integrate HTA evidence design much earlier in the R&D life cycle to eliminate long-term aggregate risk and prioritise your pipeline based on the best-possible revenue generation.
- Start preparations for HTAs as early as possible and work with the very best and experienced experts in the field.
- Understand exactly who are the stakeholders and what are their policies, processes and requirements.
- For each marketplace know what is the standard of care and the patient care pathway.
- Internationalisation and international development and market penetrance strategies need to be designed into every decision for each component of the pipeline prior to investment.
- Global marketplaces need to be assessed, valued, understood and the pipeline adapted accordingly.. single marketplaces have limited to no value.
- Grasp the concept that no other entity wants to in-license, co-develop or purchase risk, even if you have received significant investments; if you are not integrating the final customers constraints into your product design.. then you will not have a product or value.
- Understand how to increase value throughout and along the innovation lifecycle for each component of your pipeline as a function of its total potential.