



Asset Valuations in Healthcare

We are committed to bringing insight and high-quality solutions to our clients. In doing so we help them meet the many challenges of today's complex healthcare marketplace.

The valuation outputs we generate can be easily integrated with any in-house existing financial systems, presentation styles or platforms that may be currently operational. This ensures a faster uptake within the business, enabling resources to be re-directed towards implementing the outputs and leveraging new information.

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Valuing Assets in Healthcare

- How to build a healthcare asset valuation / what you should look for in a robust valuation
- Impact of quality inputs – patients, price & share – the three fundamentals
- Capturing & reporting risk, sensitivity & probability

Healthcare is a heavily specialist arena and it is not always obvious how an asset should be valued. Many renowned consultancies provide valuations and forecasts for assets in development, but these valuations or forecasts are often lacking in detail or consideration of true drivers of the market.

Since it can be so difficult to understand what a valuation should be based on and include, let's break the valuation down in to its constituent parts so that you can check what has been included vs. what should be included alongside the quality or level of detail that can be covered and would expect to be provided as part of such a valuation project.

Very broadly, any valuation should take into account **income** and **expenditure**.



Building a Robust Asset Valuation

Expenditure:

This will mostly be focused around the cost of the R&D for the asset. Depending on how far through the process the asset is, the amount of spend can vary substantially.

Estimating spend on clinical trials:

This is quite a tough area to estimate, however there are industry benchmarks and datasets that can be applied to help estimate what costs could be likely to be.

Step 1: Identify the therapy area / indication of focus.

Step 2: Find any other assets that are being developed for the same or a similar target audience.

Step 3: Find the clinical trial parameters for the comparator product – specifically these should be patient enrolment numbers, phase of development and duration of phase.

Step 4: Map out what you think a realistic clinical development pathway could look like – including information gathered in Step 3 above.

Step 5: The majority of clinical trial cost is related to patient enrolment. Apply a suitable industry benchmark for cost per patient in a clinical trial in the disease area you are valuing, multiply this by the patient enrolment number and you should have a broad, ballpark cost for the trial phase.

Step 6: Include costs for submission to regulatory bodies and associated licences

Manufacturing and COGs

It may not be possible to include this at this stage, however if the manufacturing process is likely to involve products made through a biological process, the cost of manufacture and distribution will be higher than for a small molecule.

Forecast Revenue

In general, this is where the majority of the time is spent. Depending on the asset, this may be quite straight-forward, or it may have specific dynamics that need to be considered since they will have a material impact on the forecast.

Regardless of the specialty, there will be some core components that will need to be included within your forecast. Since we are dealing with healthcare assets, the fundamental basis of the forecast should be grounded in patient numbers. If there are no patients, there is no market. Once we get the patient number correct, everything that flows from there is relatively simple to deal with.

Epidemiology – getting the patient foundation correct

Please refer to our additional whitepapers regarding **Establishing the Prevalence of Rare Diseases** and **Estimating Disease Prevalence from Published Literature**.

In essence, we are seeking to quantify the patient population that would be considered eligible to be treated with the product we are concerned with valuing.

Hopefully the indication will have been identified based upon the clinical development program outlined in Step 1 of the **Expenditure** section.



Questions to ask next are:

1. Is this an acute (one off) treatment or chronic (on-going)?
2. Should you be considering new / incident patients or prevalence?
3. Do you need to know how long patients live for with the condition? And is this likely to change over the period of the forecast or as a direct result of new therapies or diagnostics entering the market?
4. How easy is it to find data for this condition? Is this widely studied and defined or is it a rare / niche disease?

5. Is this disease a sub-population of a larger condition? Are there factors that could influence this sub-population within that larger condition? (e.g. if you are dealing with a sub-population that develops due to progression of the main disease, if there are new therapies, changes in guidelines, improvements in patient management or even disease prevention, these will all impact the eligible downstream patient population)

There are many factors that can affect your eligible patient population from the epidemiology side. Some diseases are more dynamic than others and it is important to differentiate if your disease is dynamic as this can cause significant disruption to your forecast. Please see the **Healthcare Compass** tool which is designed to help you determine the degree of stability / disruption in your market.

Market dynamics and landscape

Once you have a solid patient foundation to build on, you are ready to consider market dynamics such as:

- Share of the market that you can capture with your asset
- Current market landscape – who's treated with what
- Future market landscape – how is the landscape likely to look by the time the asset launches?

This is undoubtedly one of the most subjective areas of any forecast. Competitive landscape is possibly one of the easiest to find data on in this section.

For estimation of patient share capture, an understanding of unmet need, clinical efficacy and side-effect profile are useful guides. Some consideration to reimbursement can be included at this stage as long as it is explicitly stated, otherwise this section should deal with the clinical demand requirements, in the absence of market access restrictions (which will be included later in the forecast). The rationale for splitting these two factors is that they will require different strategies and should drive different elements of the forecast. The clinical demand is driven by product characteristics whereas market access has a different set of drivers for consideration.

Finally, future market events should be overlaid to the forecast to impact the market. These could be direct competitors that will compete for patient share or adjacent technologies or classes of product that could affect the market dynamics.

Consideration of physician decisions and clinical management algorithms can help add structure and direction to this section of the forecast model. Ideally, any valuation forecast should mirror the clinical decisions that are likely to influence the flow of the patients from

diagnosis to receiving your asset. Flexibility of these dynamics over time will allow you to better understand how your product is likely to perform as the market matures.

Other factors to consider in this section are:

1. Duration of treatment – is this a driver in your market? How long are patients typically treated for?
2. Likely switch dynamics – if a patient starts on a treatment, can they be switched away to a competitor or are they 'locked in' to that treatment for a period of time?
3. Persistence **BUT NOT compliance** – similar to duration of treatment, persistence is a measure of how long patients remain on therapy, but is slightly different to duration of treatment in that persistence tends to be a patient driven metric whereas duration on therapy tends to be clinically driven (e.g. a prescribed regimen that is given for a set period of time or until it no longer controls the patients symptoms, whereas persistence tends to be how long a patient persists with taking their therapy before they discontinue, it tends not to be dictated by a clinical response). Compliance generally refers to the alignment between how the medication should be taken (according to the label) versus how it is taken in reality (patients can miss doses or take doses late / early; however, they are still on the treatment).

Once the patients are in the “right place”, we can convert them to volume and revenue outputs.

Conversion of patients to volume and value

In this section we now convert the patients through to volumes or revenue. Depending on the phase of the asset, it may be more straightforward to apply a cost per year of therapy as a straight multiplier to reach the forecast – this tends to be the case for assets in Phase I. If there is more information available regarding the likely patient dosing, then the following conversion factors should be considered:

- Dosing frequency & schedule – how often is the therapy given?
- Compliance – how patients take the therapy vs. how it should be given in a perfect setting?
- Days of treatment per year / in the treatment schedule – generally for chronic treatment this is likely to be 365, but this will vary depending on the asset / indication

Price can now be applied to the volume unit (or direct as patient cost per year as mentioned previously) to generate a forecast.

Market access & supply constraints

Next, once the “demand” side of the forecast has been determined, we can start to ‘dampen down’ the forecast with a number of assumptions regarding market access. It is unlikely that from the date of marketing authorisation that there will be wide-spread adoption of a new

product. Generally, there is a lag between MAA date and reimbursement, this varies by country but is a significant factor to include in the forecast since it has a material impact on financial calculations such as NPVs.

Where there could be additional supply constraints due to limited manufacturing / shipping or co-dependency on a companion diagnostic which may introduce its own limitations to access (e.g. therapeutic that requires a PET image for diagnosis or patient confirmation ahead of starting treatment may limit market uptake due to infrastructure restrictions), these should be included explicitly within the forecast to show that they have been considered.

Finding a price point

In the same way as patients are critical for the foundation of the forecast, price is similarly critical in converting those patients to revenue outputs.

For early stage assets, there is not likely to be any clinical outcomes data on which to base a value-based calculation (although models can be worked through with sets of assumptions – this can be useful in determining what endpoints clinical trials need to achieve in order to support a given price). Thus, comparator benchmarks can be identified in order to ground the forecast in something more real than just a guess.

The following aspects can help to identify a suitable product as a surrogate for price:

- Current gold standard in market – this might be a direct comparison with a drug, or it might be a procedure cost but should give an idea of the cost of treatment of the patient. When considering the gold standard, please also consider any loss of exclusivity that may occur before the new asset launches – if the gold standard goes through LOE ahead of your drug launch, you could find that your price point is radically different to the price you have assumed in the forecast.
- Similar class or type of product already on the market in a similar or related therapy area – in some instances, there are no products in the market or products are of unsuitable clinical efficacy to be a meaningful comparison. By looking at similar products in adjacent areas it is possible to pick a suitable benchmark as long as the rationale is reasonable as to why this product or class was picked and how it is similar to the situation you are seeking to value

Dealing with risk (and probability)

Analysing risk:

At this point we should have a workable forecast model that covers key dynamics within the market alongside any areas of 'risk'. Throughout the process there will undoubtedly have been

areas of concern, e.g. there is no data regarding treatment rates in the population or duration of therapy is unknown etc. These 'unknowns' are important to pay attention to. They should be documented as areas of potential risk since they are unknown.

It is prudent to run a sensitivity analysis on any forecast model, especially where there are assumptions, in order to understand the potential impact of the unknowns on the forecast outputs. You will quickly find that some unknowns / assumptions have a bigger impact on the forecast than others. Pay more attention to those that have a greater impact as these are the areas of highest risk.

Mitigating risk:

List out the key assumptions / areas of risk and see if there is anything that can be done to provide greater insight or reduce the variance of the assumption. This could be simply purchasing some data or a report that gives greater confidence to an area of the forecast. Areas to pay most attention to will be:

1. Patients – making sure the foundation is as accurate and robust as possible
2. Share of market – close estimation of the share of the market you are going to capture with the product
3. Competitive / future landscape development
4. Price

These are the fundamental drivers of the forecast.

Presenting Risk & Probability

Risk & probability, while different but linked, are interesting concepts to present since they can be difficult to convey in the context of a forecast.

The typical way of presenting risk is the tornado chart – where an NPV or peak revenue value is taken at “baseline” with a defined set of assumptions, each assumption is then flexed around that baseline value to produce a low and a high revenue / NPV output. These are then presented as + / - in a bar chart format to convey the degree of impact each of these assumptions has on the revenue or NPV value.

In this way, senior management can get a sense of where there is a high degree of risk or lack of information and derive a strategy to address this and reduce the risk or degree of variance in what is known vs. unknown.

Please note that some areas of the forecast will be near impossible to reduce in terms of risk and range since they are dealing with future predictions and thus can not be known. However,

this may only be the case with market share. Patients and price will be defined boundaries that can be found, documented and understood.

Probability is slightly harder to convey as it almost deals with the likelihood of the 'risk event' happening or being true. Probability is generally reserved for portfolio valuations where a basket of assets is being compared and considered for investment or priority for development acceleration.

However, for a single product forecast it can still be valuable to include but might be a step too far for most senior management in this context.

Of course, this is a more comprehensive list of what should go into an asset valuation; however, it is likely that some of this may be missing in most valuations that you may come across.

Core essentials to pay attention to

As per the fundamentals of forecast drivers, attention should be paid to:

Patients – what is the patient number based on? Is it solid and robust? It may not have to be robust enough to go in front of investors, but it is a significant driver of the forecast and should be a solid number on which the forecast is based.

Price – what price has been applied? Has this been adapted for country or region? Typically, the USA has a higher price point than Europe due to differences in the pricing environment and how prices are set within the healthcare market. Have LOE events been included?

Competition & market events – have additional market competitors been included in the forecast? If the forecast is worth investing in, it is likely that there will be competitors entering the market in the future, these are likely to impact revenue and any financial metrics calculated from the forecast. Are there any significant changes expected in the market? Changes in guidelines & treatment protocols, diagnostics, vaccines?

Please also see our **Asset Valuation Checklist** for a one-page guide on what to include in your forecast valuation.



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