OHE

A framework for value-aligned pricing of combination therapies

CONTRACT RESEARCH REPORT
JUNE 2024

Matthew Napier
Chris Sampson
Amanda Cole
Martina Garau

ohe.org

OFFICE OF HEALTH ECONOMICS
CONTRACT RESEARCH

JUNE 2024

A framework for value-aligned pricing of combination therapies

Matthew Napier
Office of Health Economics, London

Chris Sampson
Office of Health Economics, London

Amanda Cole
Office of Health Economics, London

Martina Garau
Office of Health Economics, London

Please cite this report as:
Napier M., Sampson C., Cole A., Garau M., 2024. A framework for value-aligned pricing of combination therapies. OHE Contract Research Report, London: Office of Health Economics. Available at: https://www.ohe.org/publications/framework-for-value-aligned-pricing-of-combination-therapies/

Corresponding Author:
Chris Sampson
csampson@ohe.org

For further information please contact:

Professor Graham Cookson
Chief Executive, OHE
Honorary Visiting Professor in Economics at City, University of London

Tel +44 (0)207 747 1408
Email gcookson@ohe.org

About OHE Contract Research Reports

Many of the studies OHE performs are proprietary and the results are not released publicly. Studies of interest to a wide audience, however, may be made available, in whole or in part, with the client's permission. They may be published by OHE alone, jointly with the client, or externally in scholarly publications. Publication is at the client's discretion.

Studies published by OHE as OHE Contract Research Reports are subject to internal quality assurance and undergo external review, usually by a member of OHE's Editorial Panel. Any views expressed are those of the authors and do not necessarily reflect the views of OHE as an organisation.

Funding and Acknowledgements

This contract research report was commissioned and funded by Astellas Pharma Europe Ltd. The views expressed in this report are those of the authors and do not necessarily represent the views of Astellas or any other contributors to this project.

Table of Contents

Executive Summary

Combination therapies can provide effective treatment options and improve patient outcomes. However, there are significant barriers to patient access to combination therapies, including the prevailing pricing models used in Europe.

This report introduces a framework to support the identification of suitable pricing models for combination therapies, addressing the complex challenges faced in bringing cost-effective combinations to market.

The challenges associated with access to combination therapies are well understood and include issues relating to affordability, value attribution, legal constraints, and availability of evidence. With the development of combination therapies becoming more common in oncology and beyond, and a lack of agreed-upon pricing models in Europe, the need for innovative pricing strategies is increasingly evident.

We develop scenarios that should be used as a classification for combination therapies. These form a basis for identifying the most suitable pricing model. Therapies may be classified according to scenarios relating to the therapy configuration, developer configuration, patent status, and therapy uses. This classification of combination therapies serves as the foundation for the approach that we outline, supporting tailored pricing strategies that reflect specific circumstances and constraints.

The report draws learnings from the literature on multi-indication pricing, which is analogous to the case of combination therapies. Proposed pricing models in this context include those based on net price adjustments to list prices, weighted or 'blended' prices, multiple prices for the same therapies, and outcome-based payments. We consider the suitability of these models for combination therapies and introduce the notion of 'combination-based differential pricing' (CBDP). This allows for flexibility in the adoption of any specific pricing or payment model that supports differential pricing for combination therapies. CBDP can be implemented via a range of pricing models through which prices can be differentiated. In principle, these adjustments can be made based on either volume or value and may be specified ex-ante or ex-post.

We outline a strategic approach for decision-makers to implement CBDP effectively by precisely specifying the scenario for a given combination therapy. This enables stakeholders to navigate the challenges and barriers that we discuss and select the most suitable pricing model. Decision-makers should adopt our proposed approach and use it as a foundation to:

1. Implement combination-based differential pricing,
2. Pursue value-aligned combination pricing, and
3. Consider volume-aligned combination pricing as an interim solution where necessary.

In many cases, net price adjustments should be the preferred strategy for the implementation of CBDP. Where evidence of value is lacking, and concerns about affordability dominate, volume-aligned combination pricing may be a viable interim solution while a system to support value-aligned pricing is developed. CBDP is just one part of a wider strategy to support access to combination therapies, and important barriers and facilitators must be considered when selecting a pricing model.

By adopting this framework, stakeholders can ensure that combination therapies are priced in a manner that reflects their value to patients and the healthcare system. This will support progress towards a system where patient access to clinically effective combination therapies is timely and affordable.

1 Introduction

A combination therapy (CT) involves two or more treatments with distinct but complementary mechanisms being used together or in close sequence to treat a single disease (Towse et al., 2022b; Briggs et al., 2021). The medicines included in the combination are often referred to as the backbone and add-ons. A backbone is typically a drug already approved for use in the market as a monotherapy, often a well-established standard of care in treating a disease. Add-on therapies may be specifically designed to work in combination with the backbone therapy or already be in the market as an independent monotherapy. However, not all CTs satisfy this typical example, and other scenarios may be relevant.

CTs have become increasingly common in recent years (Latimer, Towse and Henshall, 2021; Henshall et al., 2023). This trend is expected to continue; the European Federation of Pharmaceutical Industries and Associations (EFPIA) predicts that around 68 CTs in oncology are expected to launch between 2023 and 2028 (EFPIA, 2023). This represents an increase in the proportion of all launches in oncology that involve CTs. In addition, the Association of the British Pharmaceutical Industry (ABPI) reports that CTs make up almost half of the pipeline of companies that focus on developing cancer treatments (ABPI, 2023).

The surge of CTs in oncology is due in part to the expected increased clinical effectiveness of such therapies (Plana, Palmer and Sorger, 2022; EFPIA, 2024), which has been demonstrated in distinct disease stages and tumour types (Bashraheel, Domling and Goda, 2020). Compared with monotherapies, CTs target key pathways synergistically, potentially reducing drug resistance and providing additional anti-cancer benefits (Mokhtari et al., 2017). Furthermore, research has shown that cancers can become resistant to monotherapies that are shown to be initially effective, and CTs can help to overcome this resistance (Humphrey et al., 2011).

CTs are also relevant beyond oncology, especially in the context of infectious diseases, where they can reduce the likelihood of resistance. Attacking pathogens on multiple fronts can make them less likely to successfully adapt to and resist the drugs being used. This is most notable in the treatment of human immunodeficiency virus (HIV), for which antiretroviral therapy (ART) that relies on a combination treatment regimen has transformed HIV into a manageable chronic condition (NIH, 2021).

Stakeholders have recognised that CTs pose a significant challenge to pharmaceutical pricing policy and reimbursement in oncology (Latimer et al., 2021). Researchers have sought to find solutions to address the challenge, including developing an approach to the attribution of value to the components of a CT (Towse et al., 2022b). This is needed because many HTA agencies evaluate CTs as a single technology and do not attempt to estimate the contribution of the individual components.

In this context, individual therapies that make up a CT may already be priced based on their effectiveness as monotherapies in the same or a different indication. The implementation of usage-specific pricing may thus be an important facilitator for reimbursement and access. We use the term combination-based differential pricing (CBDP) to describe any pricing or payment model that supports usage-specific pricing for CTs on the basis of their characteristics.

Treatment and related costs, such as administration and background health care resource use, are typically incurred for a longer duration when using CTs compared with a monotherapy backbone. If the backbone therapy is already priced at the maximum willingness to pay set by the HTA agency or payer, this can result in a CT not being deemed cost-effective when the add-on therapy is priced at

zero (Latimer, Towse and Henshall, 2021). This can limit patients' access to a more effective treatment regimen than existing monotherapies.

With value-based pricing, the constituent therapies could be priced according to the value generated in the specific CT indication (rather than an existing one), ideally based on their contribution to the overall effectiveness of the CT. The adoption of usage-specific pricing for CTs has been described as a prerequisite for the effective financial management and sustainable long-term pricing of such therapies (Henshall et al., 2023).

Innovative payment models may help to address some of the access challenges to CTs (EFPIA, 2024). However, the role of these models in achieving usage-specific pricing for CTs remains unclear. Without clear frameworks and consistent approaches to pricing CTs, patient access may be restricted or delayed. CBDP is one part of a wider strategy that will be necessary to address the challenge of achieving sustainable access to CTs. Appropriate value attribution frameworks, legal agreements, and data infrastructure are all important parts of this strategy.

In this report, we set out a framework to guide the identification of suitable payment models for CTs. The approach we describe relies on the specification of four fundamental factors: i) the challenges associated with pricing CTs, ii) the different scenarios in which CTs may come to market, iii) the innovative pricing models that may be used, and iv) the barriers and facilitators to implementing CBDP. The implementation of CBDP requires the identification and understanding of each of these factors for a given CT in a given market.

Section 2 of this report begins by outlining the main challenges associated with CTs that have been discussed in the literature. In Section 3, we describe the different scenarios that may characterise a CT and how they relate to the different challenges that may arise. Section 4 introduces innovative payment models that have been proposed in the context of multi-indication pricing, with a discussion of their relevance to CTs and dependence on the scenarios described in Section 3. Section 5 summarises some of the barriers and facilitators to implementing CBDP. In Section 6, we describe how our framework should be used to inform pricing for CTs. Section 7 outlines recommendations arising from this framework, and Section 8 provides the next steps for stakeholders.

2 Challenges

In different contexts, the use of the same medicine can result in variation in patient benefits and value (Cole, Neri and Cookson, 2021; Towse et al., 2022b). This applies to the use of medicines in distinct indications or different treatment regimens. Researchers have outlined several challenges associated with using a single fixed price across different uses, which we describe below. These challenges may undermine a medicine's value for money in different treatment contexts, incentives for research and development, and patient access. However, moving beyond the use of a single price by embracing differential pricing can also present challenges. In this section, we highlight some of the key challenges that have been discussed in relation to the pricing of CTs.

2.1 Cost-effectiveness and affordability

The use of multiple therapies in combination, with a backbone priced at its value as a monotherapy, in addition to one or more add-on therapies, will result in a higher overall cost, likely exceeding the value of the CT (Towse et al., 2021). In addition, CTs are anticipated to be taken over a longer duration, as the overall survival of patients is expected to be extended, compounding the effect of higher treatment costs. It has been argued that the expected increase in CTs coming to market in the next few years will exacerbate the impact on healthcare spending, highlighting the growing need for approaches to managing affordability (Henshall et al., 2023).

The interaction between these features of CTs and current value assessment frameworks has led to a phenomenon known as *not cost-effective at zero price* (Latimer, Towse and Henshall, 2021). This occurred in a National Institute for Health and Care Excellence (NICE) assessment of pertuzumab in combination with trastuzumab and docetaxel for breast cancer (NICE, 2013). Even at a price of zero, pertuzumab in combination was not considered cost-effective. This is because the CT increased survival, and the incremental benefits were offset by the inclusion of all allowable incremental costs associated with the longer duration of the backbone therapy (Latimer, Towse and Henshall, 2021).

In cases where the individual therapies comprising a CT are already approved in another indication, it may be necessary to adopt a lower price for the CT to achieve cost-effectiveness. In some cases, developers may be prepared to do this (assuming price exceeds marginal cost) to make the CT cost-effective and, therefore, available to patients, which may also increase sales volumes. However, if prices are inflexible, such that a price discount must also be applied across all current and future uses and indications, developers may be disincentivised from offering a discount. In that case, effective CTs may not be brought to market or delayed. Differential pricing may therefore be crucial to facilitate patient access to cost-effective CTs.

2.2 Value attribution

Where differential pricing is allowed, and CTs can be identified as cost-effective, there remains a challenge in attributing value to the different therapies that make up a combination. Ideally, the overall payment for the combination would reflect the value of the combination (Towse et al., 2022b). In addition, the value of each treatment would reflect its marginal contribution to the health outcome of interest (Briggs et al., 2021; Towse et al., 2022b). This arrangement could support sustainable pricing and provide the right incentives to innovators. However, implementing this in practice can be difficult due to the feasibility of quantifying these marginal contributions. Approaches to splitting the value between the components of a combination have been proposed in the literature, but there is no

consensus on the most preferred approach or the practicalities of implementation (Towse et al., 2022a; Briggs et al., 2021). Differential pricing may be a prerequisite for the adoption of evidence-based value attribution frameworks, as it is in the determination of payments and pricing that such frameworks become useful.

2.3 Evidence generation

There are challenges associated with evidence generation for CTs. In part, this relates to the challenge of value attribution; demonstrating the marginal value of each component of a combination is challenging (Briggs et al., 2021). Traditionally, regulatory approval and reimbursement have relied on randomised controlled trials. However, the complexity of CTs presents a challenge to clinical trial design where there is a need to assess the safety and efficacy of therapies both independently and in combination (European Medicines Agency, 2017). There may also be further complexities in variable dosing, treatment schedules, and sequences for different patients. These trial design challenges carry through to the complexity in the statistical analysis of novel evidence where the analyst seeks to isolate the interactive effects. Consequently, there may be relatively little evidence available to inform decisions.

2.4 Legal restrictions

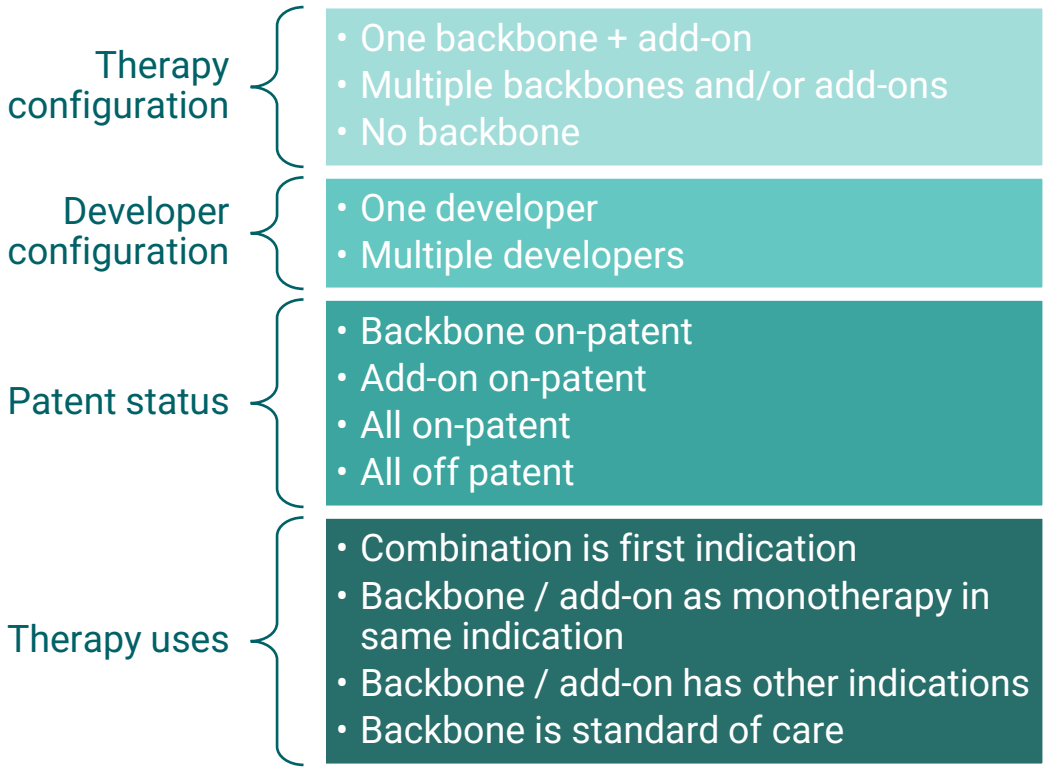
Many countries in Europe have laws for anti-competitive behaviour and collusion between companies (EFPIA, 2023). Competition law may present a significant barrier to pricing discussions, and other collaborations between developers of the same combination that may support access to CTs. Specifically, this concerns the exchange of information between parties and the ability to enter into commercial agreements and negotiations on CTs between different companies (Latimer et al., 2021). Competition law across different contexts will dictate the feasibility and ability to enter such negotiations.

3 Scenarios

The pricing of CTs is complex due to the heterogeneity of their potential legal and technical characteristics. These characteristics can be used to help define possible CT scenarios, which in turn can be used to map to the appropriate pricing model for the combination type. We define these as i) therapy configuration, ii) developer configuration, iii) patent status, and iv) therapy uses, as summarised in Figure 1. More than 100 distinct scenarios may be defined in terms of these characteristics, with some more likely to occur than others.

Not all the challenges outlined above will apply to all possible scenarios, and we recognise that only a sub-set is particularly problematic, most importantly CTs with multiple developers of on-patent constituents. In the following sections, we outline these different scenarios and how they link to the challenges we have described above.

FIGURE 1: COMBINATION THERAPY SCENARIOS



3.1 Therapy configuration

To date, most research regarding the pricing and value attribution of CTs has assumed the existence of backbones and add-ons, mainly because this scenario is more likely to lead to the *not cost-effective at zero price* issue. Backbones are typically treatments that are already approved and established on the market.

However, there may also be scenarios where no treatment in the combination can be considered a backbone (or, by extension, an add-on). A combination may be formed of two or more independent novel monotherapies. It is important to recognise the potential heterogeneity in therapy configuration beyond a 'backbone + add-on' scenario, as numerous new combinations come to market. To date, there has been little consideration in the literature of such diversity in therapy configuration, which would have downstream implications for the negotiation of prices and value attribution. In scenarios where there is no backbone – and especially if a CT consists of two novel monotherapies – negotiation and alignment of incentives may be less prone to difficulties. In this scenario, there is likely to be more flexibility in the choice of pricing models.

The more individual therapies that make up a combination, the greater the overall challenge becomes, particularly if all are on-patent. This can be seen from a cost-effectiveness and affordability perspective, as well as from a regulatory perspective. For example, the more therapies that are combined, having been priced at their value as monotherapies, the greater the overall cost becomes, impacting affordability as well as the ability to show value for money. In addition, a CT including more therapies likely increases the regulatory complexity and burden, potentially leading to delays in bringing the CT to market.

3.2 Developer configuration

CTs may include products from one or more developers. Where a single developer is responsible for all constituents of the combination, pricing may be more straightforward because one developer has complete control over pricing decisions, payers need only negotiate with one company, and there are likely to be fewer legal barriers. There might be no need to identify the contribution of each constituent, as the overall payment on the CT will go to the single developer. However, if the constituents are on-patent it is still desirable to price them according to their contribution to the CT.

The challenge is more complex when combinations are made up of products from different developers. Firstly, there is a need to coordinate negotiations between the developers. In a typical 'backbone + add-on' scenario, there will likely be a misalignment of incentives between the backbone developer and the market (add-on) entrant in bringing the combination to market (Briggs et al., 2021). Where a backbone therapy has already received HTA approval, its developer is likely to have limited incentive to renegotiate its price (Briggs et al., 2021). This applies to contexts where a treatment has a single price, whereby a renegotiation would lead to a lower price for all uses. This increases the risk of failure of an agreement or may delay timely access to the CT.

Secondly, products in combination that are from different developers may present competition law issues. This relies on the ability of developers to enter price negotiation, which is context-specific.

Finally, with multiple developers, the attribution of value to the constituents becomes very important. In all cases, the overall payment for the combination should reflect its value. However, to ensure the right incentives exist for the developers, the payments received for each constituent should reflect the value they contribute. Without this, incorrect signals for innovation would be provided, impacting the availability of future combinations.

3.3 Patent status

The patent status of the components within a CT will play an important role in determining the most appropriate pricing strategy, as it influences developers' incentives and the affordability of therapies for payers.

Combinations in oncology are increasingly involving two (or more) on-patent medicines (Latimer et al., 2021). This leads to both affordability and value-for-money challenges. Affordability is a challenge because combining multiple on-patent medicines priced at their value as monotherapies is likely to be expensive, in comparison to a monotherapy alone. Combining multiple on-patent therapies may place upward pressure on the overall cost of the combination, in part likely due to the high value the combination generates. This places additional strain on affordability. Value for money is particularly challenging when combining two on-patent medicines with single fixed prices, as it's likely that the overall price would increase more than the additional value of the combination (Latimer, Towse and Henshall, 2021). This has been seen in practice with a value assessment of clinically effective treatments being deemed not cost-effective at zero price when used in combination (Latimer, Towse and Henshall, 2021), as discussed in section 2.1.

Situations in which an on-patent medicine is combined with one or more off-patent therapies represent more straightforward scenarios, as there will be fewer conflicting incentives between developers. Where a CT is comprised of multiple off-patent medicines, this may imply a highly competitive market, in which downward pressure on prices may preclude affordability concerns, and the choice of pricing model may be less important.

The time to patent expiry is an additional consideration, likely impacting the incentives of the developer when renegotiating a price. In a scenario whereby a backbone has a short time to patent expiry, there will be an incentive to delay the introduction of the combination rather than decrease the on-patent price, which will decrease with the entry of generic/biosimilar competition. There may be important interactions to consider between developer configuration and patent status, such that patent status may complicate an otherwise simple scenario in which a single developer is responsible for all constituents of a CT. For instance, a developer may be incentivised to leverage new on-patent therapies in combination with older off-patent therapies in order to extend those older therapies' commercial value.

3.4 Therapy uses

The current use of the constituent therapies will imply differences in i) the attribution of value to the different treatments, ii) how evidence of the treatment value is generated, and iii) how the treatments are priced.

If a backbone and add-on are monotherapies approved for the indication, a good evidence base likely exists for their use as monotherapies. This will make part of the evidence generation challenge more straightforward, although still dependent on the mechanism of value attribution. This also applies to scenarios where one of the constituent therapies is the standard of care in the indication of the combination. However, in these scenarios, as discussed previously, when there is a single fixed price across all drug uses, there may be a lack of incentives for a backbone developer to renegotiate.

Where a therapy in combination is already available as a monotherapy, the practicalities of implementing differential pricing based on value and sales could also be more challenging, as there may be a reliance on the availability of registries and other mechanisms for tracking prescribing activity and outcomes that differentiate between uses. Such infrastructure may not be available.

For scenarios where an add-on is a new molecule with no previously approved indications, evidence generation and value demonstration may be challenging due to a lack of data relating to its effectiveness as a monotherapy. Such a therapy may signal innovation that a payer may wish to encourage. However, it may also be associated with a lack of competitiveness in the market, which strengthens the negotiation position of the developer.

In scenarios where the combination's constituents are used across multiple indications, the approval of the combination in a new indication is likely to expand the market size. This expansion will create affordability challenges for the payer, due to the potentially large population for which the medicines are being used.

4 Pricing models

We recommend the use of combination-based differential pricing through innovative payment models, as they can help to address some of the access challenges to CTs (EFPIA, 2024; Latimer et al., 2021). The adoption of usage-specific pricing for CTs is important in both the effective financial management as well as the sustainable long-term pricing of such therapies (Henshall et al., 2023).

Innovative payment and pricing models have been extensively discussed in the context of indication-based or multi-indication pricing, and value-based pricing. There are important parallels between indication-based pricing and combination-based pricing, including the use of the same therapy across different contexts and the differentiation of value accordingly. In this section, we first summarise some of the innovative pricing models that have been proposed in the context of indication-based pricing. We then set out how these may be applied for CBDP and assess their suitability to CTs.

4.1 Multi-indication pricing models

Researchers have carried out extensive work exploring payment models for drugs with multiple indications (Towse, Cole and Zamora, 2018; Cole et al., 2018; Neri, Towse and Garau, 2018; Cole, Towse and Zamora, 2020; Cole, Neri and Cookson, 2021). The premise for much of this work is to enable value-based pricing at the indication level, such that the price of the medicine reflects its value in a given indication (Cole, Neri and Cookson, 2021). Different pricing models have been proposed to achieve this, representing different mechanisms by which prices can be altered to recognise value in distinct contexts.

4.1.1 Net price adjustments

A value-based differential pricing model may involve (confidential) net price adjustments to a single list price (Cole, Neri and Cookson, 2021). Typically, the adjustment aligns the indication-specific net price of the treatment with its indication-specific value. Adjustments of this nature can be approximated to pure value-based differential prices, provided the net price negotiations are guided by the value of the treatment in the indication.

The confidentiality of the prices can raise concerns for stakeholders as to how the prices are agreed upon, particularly if there is no explicit process for determining prices (Cole, Neri and Cookson, 2021). However, the confidential nature of the agreements may help both health systems and developers reach more favourable agreements and reflect the differential value achieved in different contexts. Furthermore, if there is an explicit process for determining prices, while the prices themselves are still confidential, trust in the system can be built while reducing barriers to differential pricing (Cole, Neri and Cookson, 2021).

Another challenge could arise when a higher-value indication is developed and introduced as a second or follow-on indication. In this case, a higher price would be implied, which is not typically accepted in any European system. This might lead to a disincentive for developers to introduce higher-value follow-on indications, assuming that the value of all possible indications cannot be established earlier in the development and marketing of therapies.

4.1.2 Different brands or list prices

Drugs may have different list prices or be marketed under different brands according to the indications in which they are being used (Cole, Neri and Cookson, 2021). The list prices would reflect the value of the treatment in each of the indications, hence enabling value-based differential pricing.

A pricing model based on different brands or list prices has significant limitations. It will very likely lead to arbitrage across indications, whereby the drug is bought at the lower price and used for the higher-value indication (Cole, Neri and Cookson, 2021). This may be particularly likely when the different indications have similar formulations, dosages, routes of administration, and safety profiles.

Furthermore, many countries could not technically apply multiple list prices for the same drug, due to their legal and regulatory environments or data infrastructure (Cole, Neri and Cookson, 2021). The use of different brands across indications has worked in the past on the grounds of safety or administration methods; however, this would only apply in limited circumstances. An example is aflibercept, sold under different brand names Eylea® and Zaltrap®. In this case, the alternative routes of administration in the therapeutic areas supported the treatment being marketed under different brand names (Cole, Neri and Cookson, 2021).

4.1.3 Weighted prices

Therapies used across multiple indications may be given a single weighted or 'blended' price. This price can be derived from the value-based price of the drug in the different indications, weighted by the volumes prescribed of the drug in the indications (Cole, Neri and Cookson, 2021). The data on volumes can be based on expected or actual usage. Actual usage may provide a more accurate reflection of value but would require regular monitoring and recalibration of prices. The pace of additional indications in areas such as oncology makes this approach even more problematic, as it is not possible to predict all possible indications when a new molecule is launched and therefore, the price would need to be adjusted over time.

A limitation of a weighted price is the potential over- or under-prescribing of the drug in indications where a higher or lower value is delivered (Cole, Neri and Cookson, 2021). This is because a single price is used and, in some indications, this reflects better value for money than in others, leading to over-prescribing and vice versa.

In practice, there has been a tendency to weight average prices based on volume, rather than value, because it is easier to measure (Mestre-Ferrandiz et al., 2018) and perceived to be more straightforward.

4.1.4 Outcome-based pricing

Outcome-based pricing relates to agreements between payers and developers whereby the net price is determined ex-post, depending on the actual performance of the treatment, typically at the patient level (Cole, Neri and Cookson, 2021). Recommendations for coverage with evidence development may support outcome-based payments, but at the population rather than individual patient level. The payment received for the treatment in each indication will be determined by its real-world performance rather than its expected value. The ability to track real-world performance depends on existing mechanisms and processes in different settings.

4.2 Combination-based differential pricing (CBDP)

The overarching concept of value-based differential pricing can be applied to CTs. In multi-indication pricing, the differences in value generated by drugs relate to their use in different indications. CBDP is an extension of this, whereby prices could reflect the value of the drug when used in combination or as a monotherapy in a specific indication.

The objective of value-based differential pricing in the context of CTs is for the overall payment for the CT to reflect the value of the combination (Towse et al., 2022b). Each of its constituent treatments should receive a price reflecting the value it provides to the combination (based for example on a pre-defined value attribution rule) while maintaining the molecule's price in its other indications or uses. Permitting differential pricing would be a prerequisite for this approach.

We first outline a taxonomy of different approaches to CBDP, introducing the pricing strategies available for CTs, based on the indication-based pricing literature. However, for a system of CBDP to work, there needs to be an understanding of the suitability of different indication-based pricing models for CTs. The suitability of the different pricing models will vary based on the scenarios outlined in section 3, and considering the challenges described in section 2. As summarised in Table 1, our taxonomy of CBDP pricing models is specified across 3 dimensions:

1. Price adjustment mechanisms
2. Ex-ante or ex-post adjustments
3. Value-based or volume-based adjustments

This results in 12 types of CBDP strategy, labelled A to L in Table 1.

TABLE 1: COMBINATION-BASED DIFFERENTIAL PRICING STRATEGIES

		Volume-based		Value-based	
		Ex-ante	*Ex-post*	*Ex-ante*	*Ex-post*
Price adjustment mechanism	*Multiple prices*	A	B	C	D
	Single (weighted) price	E	F	G	H
	Net price adjustments	I	J	K	L

4.2.1 Price adjustment mechanisms

The distinct value generated by using treatments in different contexts, including as a monotherapy or in combination, can be reflected in pricing through three different mechanisms. First, individual therapies may have multiple list prices depending on whether they are marketed as a monotherapy

or to be used in combination. Second, a single weighted or 'blended' price could be used, corresponding to a weighting (by volume or value) according to its different uses. Third, adjustments to the net prices of treatments could be made depending on whether they are used as a monotherapy or in combination for a specific indication.

The use of different brands across different indications can typically only be implemented based on safety or route of administration. As with drugs with multiple indications, this will likely only apply to a narrow set of CTs and is unlikely to be feasible or acceptable in most situations. Since CTs often involve drugs already approved as monotherapies in the indication of interest, it is unlikely that the administration route or safety profile would be different. Therefore, the use of multiple list prices is likely to be suitable to an even smaller set of scenarios, in comparison to monotherapies with multiple indications. Therefore, strategies A to D in Table 1 are unlikely to be relevant in most cases.

With a single weighted price, there may be challenges associated with incentives for prescribing, as observed in the case of multi-indication drugs. However, the occurrence of this phenomenon is less clear with CTs, due to the added complexity of the different potential scenarios outlined in section 3. This refers to strategies E to H.

Adjustment of net prices represents the most flexible approach and is particularly useful where a treatment has different uses, for example in numerous indications as well as in combination or as a monotherapy. Adjusting net prices (strategies I, J, K, or L in Table 1) allows for pure differential pricing and is the most viable option, already applied in practice in some health systems such as Italy (OECD, 2020).

4.2.2 Ex-ante vs ex-post adjustments

Adjustments to prices may be specified and agreed based on either expected (ex-ante) or realised (ex-post) differentials. This will depend primarily upon the evidence available pre- and post-launch, and the feasibility and willingness to collect the necessary data to quantify the differentials to inform price revisions. When there is a high level of uncertainty in the evidence base at launch, it may be necessary to collect additional data and specify adjustments ex-post.

The feasibility of ex-post adjustments will rely on the health care system's ability to track the treatment's real-world performance and usage, which is absent or limited in many European countries (EFPIA, 2024). Data infrastructure is important and impacts the ability to implement ex-post price adjustments. In different settings, there are different data archetypes that should be considered when assessing the feasibility of a payment model (Cole, Neri and Cookson, 2021). In practice, given the development of therapies in different uses and indications over time, CT pricing can involve multiple adjustments making use of both ex-ante and ex-post adjustments.

4.2.3 Volume-based vs value-based adjustment

In principle, the differentials that form the basis of the CBDP model may be specified according to either volume or value. Price-volume agreements are widely used in Europe, such that the price is based on the expected volume of sales, defined ex-ante. This price does not necessarily reflect the value of the treatment and is often the result of negotiations (the higher the expected volumes, the lower the expected price). Price-volume agreements, as currently employed in Europe, tend to be at the molecule level rather than specific to indication or use. The relevance of existing approaches to price-volume agreement are therefore limited when considering CTs.

Value-based adjustments may be based on the (ex-ante) assessment of health or clinical benefits before use in clinical practice. In those cases, the agreed price is directly linked to metrics that vary between countries and settings. For example, in the Netherlands and the UK, health gains are measured in terms of the number of quality-adjusted life years (QALYs) gained, and value for money is assessed using a cost-effectiveness threshold (e.g. £20,000 to £30,000 in England). Price

adjustments can be linked to clinical endpoints or other measures of clinical benefits in countries focusing on added therapeutic benefit.

Outcome-based payment models are defined in relation to ex-post value, based on observed clinical outcomes realised in patients receiving treatment. These models have been applied mainly to address the existing uncertainty on clinical benefits near the time of launch, but their implementation can also result in different prices across and within indications (Cole et al., 2021). In Italy, payment-by-result schemes linked to clinical endpoints have been based on data collected through registries, mainly created for oncology and rare conditions.

In principle, value-based adjustment of prices can rely on any measure of clinical benefit, including therapeutic added value, and a value attribution framework can be specified according to the most meaningful outcomes for the health system.

Value- or volume-based differentials may be informed by considerations of economic surplus distribution between developers and payers. Some researchers have argued that all the surplus should be appropriated to the industry (Danzon, Towse and Mestre-Ferrandiz, 2015), while others have argued that the surplus should be shared between producers and consumers (Claxton, 2007). Whether value- or volume-aligned, differential pricing can allow for any distribution of economic surplus between the producer and consumer. Where new uses for a therapy (e.g. in combination) imply an extension of volume at a given price, a greater allocation of surplus may be likely to accrue to the developer. However, the distribution of surplus would be heavily dependent on the order in which indications and uses come to market, with corresponding incentives to developers. A consistent framework of CBDP with value-based differential pricing would facilitate a more consistent and rational approach to the distribution of surplus.

5 Barriers and facilitators

Several barriers and facilitators exist for implementing CBDP. These include the availability of an accepted value attribution framework, legal considerations, and data infrastructure. As described in section 2, current value assessment and pricing approaches are not well adapted to CTs. They are a barrier to access, particularly in the case of an add-on therapy not being cost-effective at zero price (EFPIA, 2023; Latimer, Towse and Henshall, 2021), despite being clinically effective.

According to a 2020 OECD report, almost all of the European countries included (Belgium, Germany, Hungary, Italy, Latvia, Lithuania, Norway, Sweden, Switzerland, UK) assessed combination regimes with standard evaluation methods and did not attempt to attribute value to the components (OECD, 2020). Agreeing and implementing a robust value attribution rule, ensuring the right signal to developers, remains a key enabler for CBDP.

An approach to value attribution adopted in France provides one example of an arbitrary rule being applied (OECD, 2020). For a combination of two treatments (B+A; backbone + add-on), a comparison is made between the combination and the monotherapy comparator (B). If the comparison shows a 'minor added benefit', the total cost of the combination (B+A) must be equal to the cost of the monotherapy (B). If there is a 'greater added benefit', the overall cost of the combination (B+A) must equal the previous cost of the monotherapy (B) plus 10% or more. The pricing committee negotiates with individual companies separately, with no formal approach to attributing value to the constituents. This represents a mechanism for implementing usage-specific pricing (using net price adjustments) and, applying an arbitrary rule, it does not differentiate among CTs.

Implementing CBDP raises potential legal issues when treatments are produced by different developers. Any negotiation or communication between developers is subject to anti-trust legislation to prevent price collusion, which may prevent such negotiations from taking place. The UK Competition Markets Authority (CMA) statement on CTs outlines a negotiation framework that enables the exchange of information between companies (CMA, 2023). The goal is to reach a commercial agreement to supply CTs at a cost-effective price, which is within the current value assessment frameworks. Such agreements facilitate the implementation of CBDP. However, even with such an agreement in place, there is a need for value attribution rules to be introduced to inform such agreements between the parties. To this end, commercial frameworks for new medicines agreed between developers and payers can be a vital facilitator for the adoption of innovative payment models.

The ability of many European countries to track drug usage is lacking or limited (EFPIA, 2024), requiring investment in data collection infrastructures and the development of sustainable data generation models. In Italy, a system of nationwide web-based registries for oncology and orphan medicines has allowed for usage-specific prices to be based on realised value and actual patient outcomes, enabling outcome-based pricing (Cole, Neri and Cookson, 2021). However, in recent years outcome-based payments have declined, with simpler agreements based on confidential discounts on the single list price replacing them (Cole, Neri and Cookson, 2021). Therefore, although the data infrastructure exists, it may not necessarily be used in practice to track real-world outcomes for the purpose of CBDP.

Estonia provides a good example for basing indication-based differentials on ex-post volumes in each context with usage-specific prices based on ex-ante estimates of value (Cole, Neri and Cookson, 2021). Advanced data systems support this model, allowing for tracking of usage by prescriptions at the hospital level. Further development of such data systems could support the capture of real-world patient outcomes to support ex-post price adjustments based on realised estimates of value (Cole, Neri and Cookson, 2021).

6 Implementing a framework for combination-based pricing

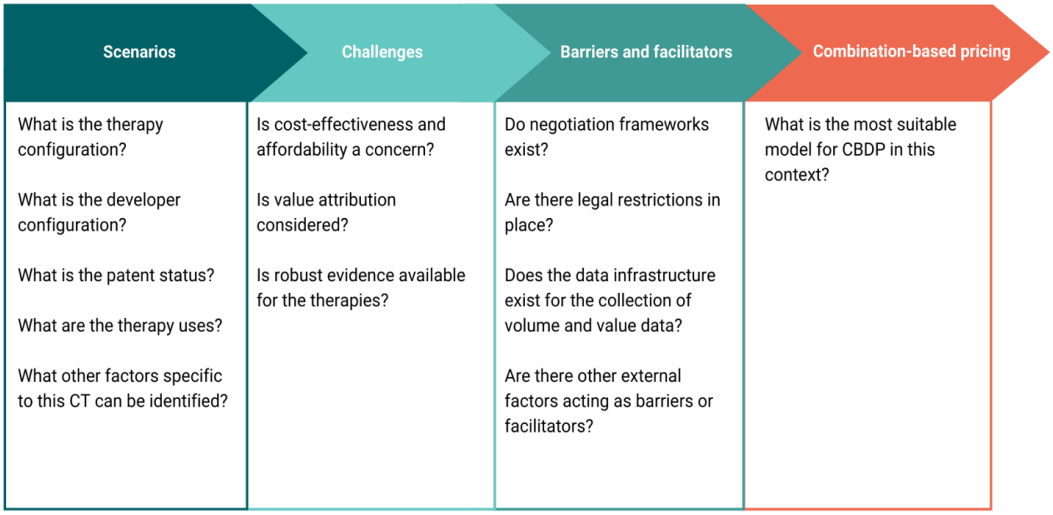
Clinical complexity, current market dynamics, and challenges for patient access demand a considered approach to the pricing of CTs. Current practice is characterised by ad hoc financial agreements that do not necessarily align with value. Experts have previously argued this represents a barrier to sustained patient access and provides negative incentives for pharmaceutical innovation (Henshall et al., 2023).

Each CT requires bespoke identification of the most appropriate pricing model. There is heterogeneity in currently available CTs, even within oncology, and this heterogeneity is likely to extend as more CTs come to market. As such, there is no single pricing model that should – or could – be applied in all scenarios. Instead, decision-makers and stakeholders should seek to identify a shared understanding of the circumstances that determine the most appropriate pricing model. These can be defined as we have described in this report, by specifying the applicable scenario for the CT being considered and mapping the characteristics of this scenario to the challenges outlined above and the barriers and facilitators that are applicable in the setting. Figure 2 describes the process by which stakeholders can move from the identification of the CT scenario to the most suitable pricing model, by way of answering a series of questions.

Clear specification of a scenario for a CT may be challenging, and it is helpful to consider mutually exclusive scenarios. A logical first step is to identify the developer configuration and patent status, which will typically be objective characteristics in all scenarios. The second step should be to understand and agree on the therapy configuration. Finally, the therapy uses should be outlined and agreed upon.

One of the most challenging scenarios occurs when a combination is made up of a backbone and add-on(s) that are both on patent and from different developers, and where the backbone is a stand of care monotherapy (Henshall et al., 2023; Latimer, Towse and Henshall, 2021). NICE TA858 provides a real-world example of two on-patent medicines from different developers (NICE, 2023), which resulted in an 'optimised' recommendation. A combination of two or more drugs, likely taken over a longer period than the standard of care, will result in a significant cost to payers. The fact that the products are from different developers and that both already have approved prices means that the price renegotiation of each component is challenging. It's unlikely that sufficient incentives exist for developers to enter into negotiations, particularly if the lower renegotiated price also applies to the products used as a monotherapy. Furthermore, the ability of the developers to negotiate agreements will depend on the legal framework of the setting. NICE TA818 provides an example in which both products in a combination were associated with the same developer (NICE, 2022). In this example, there would be no legal barriers to modifying the price, although there might still be a lack of incentive to decrease the price of a molecule with multiple indications.

FIGURE 2: A DECISION FRAMEWORK FOR CBDP



7 Recommendations

In light of the approach we have presented in this report, we propose three recommendations, as described in this section.

7.1 Adopt combination-based differential pricing

An important step in specifying a sustainable and agreed approach to pricing CTs is to establish a shared language and framework for thinking. This report satisfies this need, and we encourage all stakeholders to embrace – and further develop – the approach and terminology we have set out. We provide a guide that can support the achievement of sustainable pricing for CTs that can overcome the shortcomings of existing ad hoc arrangements. Our proposed terminology, described in **Box 1**, helps to distinguish CBDP from innovative payment and pricing models in general.

BOX 1: COMBINATION-BASED PRICING TERMINOLOGY

Combination-based differential pricing (CBDP)

Any pricing or payment model that supports usage-specific pricing for combination therapies on the basis of their specified characteristics.

Value-aligned combination pricing

Approaches to CBDP that specify differential prices or payments on the basis of the value generated by the treatments in different uses. Prices may be based on either ex-ante value assessment or ex-post assessment of patient outcomes.

Volume-aligned combination pricing

Approaches to CBDP that specify differential prices or payments on the basis of the volume of sales for treatments in different uses, without an explicit link to differential value across uses. Prices may be based on projected (ex-ante) or actual (ex-post) sales.

7.2 Pursue value-aligned combination pricing

CBDP is highly adaptable and may take numerous forms. Stakeholders should establish an intention to pursue value-aligned combination pricing over alternative forms of CBDP. The need for value-aligned combination pricing is clear: when treatments are used in different contexts, the value generated differs, and this differential should be reflected in prices. Current practice has led to

significant barriers and challenges to access, as described above. A system of value-aligned combination pricing is an important step toward enabling sustainable patient access to cost-effective CTs.

Value-aligned combination pricing should be used in any system where prices can be value-based, including systems relying on cost-per-QALY analysis and those focusing on therapeutic added value (Towse et al., 2022b).

CBDP may be a necessary condition for CTs to be brought to market, and the challenge extends beyond considerations of value attribution. Value-aligned combination pricing can support the most efficient and consistent approach to resource allocation and provides the correct incentives to innovators for optimising population health.

Net price adjustments can support the purist form of value-based pricing and in almost all circumstances will be the most effective mechanism for establishing differential prices. Thus, stakeholders should prioritise the use of strategies K and L in Table 1. The choice between ex-ante and ex-post value will be driven by factors such as current approaches to value assessment, the level of uncertainty regarding clinical benefit, and the data infrastructure in a given healthcare system.

7.3 Consider volume-aligned combination pricing in the interim

While our framework highlights several viable pricing strategies, volume-aligned combination pricing should be considered a secondary option or an interim solution while developing a system that can support value-aligned combination pricing.

Volume-aligned combination pricing may be used in scenarios where immediate pricing adjustments are necessary, particularly to address affordability concerns, but when comprehensive value assessment is not feasible or acceptable in the short term. This approach can serve as a bridge toward more sophisticated and fully value-aligned pricing models in the future. It may also be important to consider volume-aligned combination pricing within CBDP if such strategies are already in operation. For example, price-volume agreements are widely used in practice and may not make explicit reference to value in their price adjustments for CTs. Such volume-aligned mechanisms may be used to facilitate patient access in the short term, especially when there are significant concerns about affordability. Ex-ante volume-aligned adjustments may thus be used as a precursor to ex-post value-aligned adjustments.

8 Next Steps

The implementation of combination-based differential pricing is a significant step towards enabling sustainable access to CTs. However, the pricing of CTs is one part of a wider access challenge. Beyond pricing, outstanding challenges include the agreement and implementation of value attribution frameworks, the affordability of new technologies, legal restrictions, and evidence generation. Further research and stakeholder engagement are required, focusing on addressing the barriers we have discussed and the implementation of CBDP.

Further research is required to explore the feasibility of differential pricing models for a variety of payer archetypes, health data infrastructures, and specific CT scenarios. This could be achieved through the initiation of pilots and the engagement of key stakeholders across academia, industry, health technology assessment, and payers to establish our framework's suitability and possible policy changes that could facilitate its implementation.

Access to CTs demands collaborative efforts across developers and policymakers. Such efforts should seek to identify shared solutions, informed by combination-based differential pricing strategies. Contextual differences will remain important, but a common approach to the identification of pricing models for CTs, and broad alignment on pricing policy, is achievable across Europe.

References

ABPI, 2023. *Patient access to combination therapies*. [online] Available at: https://www.abpi.org.uk/value-and-access/patient-access-to-combination-therapies/ [Accessed 15 Feb. 2024].

Bashraheel, S.S., Domling, A. and Goda, S.K., 2020. Update on targeted cancer therapies, single or in combination, and their fine tuning for precision medicine. *Biomedicine & Pharmacotherapy = Biomedecine & Pharmacotherapie*, 125, p.110009. 10.1016/j.biopha.2020.110009.

Briggs, A.H., Doyle, A., Schneider, J., Roffe, E., Low, E., Davis, S., Kaiser, M., Hastwell, A., Rabin, N. and Podkonjak, T., 2021. *An Attribution of Value Framework for Combination Therapies*.

Claxton, K., 2007. OFT, VBP: QED? *Health Economics*, 16(6), pp.545–558. 10.1002/hec.1249.

CMA, 2023. *Combination therapies: prioritisation statement*. [online] GOV.UK. Available at: https://www.gov.uk/government/publications/combination-therapies-prioritisation-statement [Accessed 19 Apr. 2024].

Cole, A., Neri, M. and Cookson, G., 2021. *Payment Models for Multi-indication Therapies*. [OHE Contract Research] Office of Health Economics. Available at: https://www.ohe.org/publications/payment-models-multi-indication-therapies/ .

Cole, A., Towse, A., Lorgelly, P. and Sullivan, R., 2018. *Economics of Innovative Payment Models Compared with Single Pricing of Pharmaceuticals*. [Research Paper] Office of Health Economics. Available at: https://www.ohe.org/publications/economics-innovative-payment-models-compared-single-pricing-pharmaceuticals-0/ [Accessed 15 Feb. 2024].

Cole, A., Towse, A. and Zamora, B., 2020. *Indication-Based Pricing (IBP) Consultation Report - OHE*. [online] OHE - Leading intellectual authority on global health economics. Available at: https://www.ohe.org/publications/indication-based-pricing-ibp-consultation-report/ [Accessed 15 Feb. 2024].

Danzon, P., Towse, A. and Mestre-Ferrandiz, J., 2015. Value-Based Differential Pricing: Efficient Prices for Drugs in a Global Context: VALUE-BASED DIFFERENTIAL PRICING. *Health Economics*, 24(3), pp.294–301.

EFPIA, 2023. *Access to oncology combination therapies in Europe: Today's challenges and solutions*. [online] Available at: https://www.efpia.eu/media/ue5fxxj4/access-to-oncology-combination-therapies-in-europe-todays-challenges-and-solutions.pdf .

EFPIA, 2024. *Medical Rationale Supporting Patient Access to Novel Oncology Combination Therapies*. [online] Available at: https://efpia.eu/media/dacdtile/medical-rationale-supporting-patient-access-to-novel-oncology-combination-therapies.pdf .

European Medicines Agency, 2017. *Guideline on clinical development of fixed combination medicinal products*. [online] Available at: https://www.ema.europa.eu/en/documents/scientific-guideline/guideline-clinical-development-fixed-combination-medicinal-products-revision-2_en.pdf .

Henshall, C.H., Dankó, D., Barham, L., Espín, J., Felix, J., Harney, M., Indra, P., Mestre-Ferrandiz, J., de Pouvourville, G., Spandonaro, F., Vončina, L. and Wilking, N., 2023. Review and Assessment of Policy Options for Improving Access to Combination Therapies in Oncology in Europe. *Applied Health Economics and Health Policy*, 21(4), pp.537–546. 10.1007/s40258-023-00795-8.

Humphrey, R., Brockway-Lunardi, L., Bonk, D., Dohoney, K.M., Doroshow, J.H., Meech, S.J., Ratain, M.J., Topalian, S.L. and M. Pardoll, D., 2011. Opportunities and Challenges in the Development of Experimental Drug Combinations for Cancer. *JNCI: Journal of the National Cancer Institute*, 103(16), pp.1222–1226. 10.1093/jnci/djr246.

Latimer, Nicholas.R., Pollard, D., Towse, A., Henshall, C., Sansom, L., Ward, R.L., Bruce, A. and Deakin, C., 2021. Challenges in valuing and paying for combination regimens in oncology: reporting the perspectives of a multi-stakeholder, international workshop. *BMC Health Services Research*, 21(1), p.412. 10.1186/s12913-021-06425-0.

Latimer, N.R., Towse, A. and Henshall, C., 2021. Not cost-effective at zero price: valuing and paying for combination therapies in cancer. *Expert Review of Pharmacoeconomics & Outcomes Research*, 21(3), pp.331–333. 10.1080/14737167.2021.1879644.

Mestre-Ferrandiz, J., Zozaya, N., Alcalá, B. and Hidalgo-Vega, Á., 2018. Multi-Indication Pricing: Nice in Theory but Can it Work in Practice? *PharmacoEconomics*, 36(12), pp.1407–1420. 10.1007/s40273-018-0716-4.

Mokhtari, R.B., Homayouni, T.S., Baluch, N., Morgatskaya, E., Kumar, S., Das, B. and Yeger, H., 2017. Combination therapy in combating cancer. *Oncotarget*, 8(23), pp.38022–38043. 10.18632/oncotarget.16723.

Neri, M., Towse, A. and Garau, M., 2018. *Multi-Indication Pricing (MIP): Practical Solutions and Steps to Move Forward*. [Briefing] Office of Health Economics. Available at: https://www.ohe.org/publications/multi-indication-pricing-mip-practical-solutions-and-steps-move-forward/ [Accessed 15 Feb. 2024].

NICE, 2013. *Pertuzumab with trastuzumab and docetaxel for treating HER2-positive breast cancer | Guidance | NICE*. [online] Available at: https://www.nice.org.uk/guidance/ta509/history [Accessed 18 Apr. 2024].

NICE, 2022. *Overview | Nivolumab with ipilimumab for untreated unresectable malignant pleural mesothelioma | Guidance | NICE*. [online] Available at: https://www.nice.org.uk/guidance/ta818 [Accessed 17 May 2024].

NICE, 2023. *Overview | Lenvatinib with pembrolizumab for untreated advanced renal cell carcinoma | Guidance | NICE*. [online] Available at: https://www.nice.org.uk/guidance/ta858 [Accessed 17 May 2024].

NIH, 2021. *HIV Treatment: The Basics | NIH*. [online] Available at: https://hivinfo.nih.gov/understanding-hiv/fact-sheets/hiv-treatment-basics [Accessed 29 Apr. 2024].

OECD, 2020. *Addressing challenges in access to oncology medicines*. [Analytical Report] Available at: https://www.oecd.org/health/health-systems/addressing-challenges-in-access-to-oncology-medicines.htm [Accessed 29 Feb. 2024].

Plana, D., Palmer, A.C. and Sorger, P.K., 2022. Independent Drug Action in Combination Therapy: Implications for Precision Oncology. *Cancer Discovery*, 12(3), pp.606–624. 10.1158/2159-8290.CD-21-0212.

Towse, A., Cole, A. and Zamora, B., 2018. *The Debate on Indication-Based Pricing in the U.S. and Five Major European Countries*. [Consulting Report] Office of Health Economics. Available at: https://www.ohe.org/publications/debate-indication-based-pricing-us-and-five-major-european-countries/ [Accessed 15 Feb. 2024].

Towse, A., Lothgren, M., Bruce, A. and Steuten, L., 2022a. *Proposal for a General Outcome-based Value Attribution Framework for Combination Therapies - OHE*. [online] OHE - Leading intellectual authority on global health economics. Available at: https://www.ohe.org/publications/proposal-for-a-general-outcome-based-value-attribution-framework-for-combination-therapies/ [Accessed 3 May 2024].

Towse, A., Lothgren, M., Steuten, L. and Bruce, A., 2021. *Why we need a new Outcomes-based Value Attribution Framework for Combination Regimens in Oncology*. [online] OHE - Leading intellectual authority on global health economics. Available at: https://www.ohe.org/publications/why-we-need-new-outcomes-based-value-attribution-framework-combination-regimens/ [Accessed 7 Mar. 2024].

Towse, A., Lothgren, M., Steuten, L. and Bruce, A., 2022b. Why We Need a New Outcomes-Based Value Attribution Framework for Combination Regimens in Oncology. *Value in Health*, 25(11), pp.1821–1827. 10.1016/j.jval.2022.06.009.

About us
With over 60 years of expertise, the Office of Health Economics (OHE) is the world's oldest independent health economics research organisation. Every day we work to improve health care through pioneering and innovative research, analysis, and education.

As a global thought leader and publisher in the economics of health, health care, and life sciences, we partner with Universities, Government, health systems and the pharmaceutical industry to research and respond to global health challenges.

As a government-recognised Independent Research Organisation and not-for-profit, our international reputation for the quality and independence of our research is at the forefront of all we do. OHE provides independent and pioneering resources, research and analyses in health economics, health policy and health statistics. Our work informs decision-making about health care and pharmaceutical issues at a global level.

All of our work is available for free online at www.ohe.org.

Areas of expertise

- Evaluation of health policy
- The economics of health care systems
- Health technology assessment (HTA) methodology and approaches
- HTA's impact on decision making, health care spending and the delivery of care
- Pricing and reimbursement for biologics and pharmaceuticals, including value-based pricing, risk sharing and biosimilars market competition
- The costs of treating, or failing to treat, specific diseases and conditions
- Drivers of, and incentives for, the uptake of pharmaceuticals and prescription medicines
- Competition and incentives for improving the quality and efficiency of health care
- Incentives, disincentives, regulation and the costs of R&D for pharmaceuticals and innovation in medicine
- Capturing preferences using patient-reported outcomes measures (PROMs) and time trade-off (TTO) methodology
- Roles of the private and charity sectors in health care and research
- Health and health care statistics

CONTRACT RESEARCH REPORT
JUNE 2024

ohe.org

The Office of Health Economics A Company Limited by Guarantee of Registered No.09848965
OHE Consulting Ltd Registered Company No.09853113
OHE is a Charity Registration No.1170829
Registered Office 2nd Floor Goldings House, Hay's Galleria, 2 Hay's Lane, London, SE1 2HB