



AIM PROPOSES TO ESTABLISH A EUROPEAN DRUG PRICING MODEL FOR **FAIR AND TRANSPARENT PRICES** FOR ACCESSIBLE PHARMACEUTICAL INNOVATIONS

Introduction

The International Association of Mutual Benefit Societies (AIM) proposes a concrete alternative for setting the price of new medicines. In order to make innovative essential medicines accessible, AIM calls for a “fair European maximum price calculation model”.

Key messages

1. Medicines should be considered as a **public good**
2. Prices should be more in line with the costs of **research and development**
3. Access to **affordable** medicines should be promoted globally
4. Prices of medicines need to be **predictable**
5. A European model for the calculation of fair prices for medicines should **reward what (really) matters**
6. Prices must take the **added therapeutic value** into account
7. A fair price model should be subject to some **flexibility**
8. Corrective measures against **parallel trade and shortages** of medicines must be introduced.

1 Medicines should be considered as a public good

Essential medicines should be considered as «public goods» accessible to all. However, they are developed, produced and marketed by pharmaceutical companies whose objective is to maximize profit. In recent years the price of medicines has rapidly increased. One example is the price of cancer treatments. It has increased tenfold between 1995 and 2010¹ with still an acceleration in recent years². It has had clear impact on patient access, on the expenses of health insurers and put pressure on the healthcare budgets.

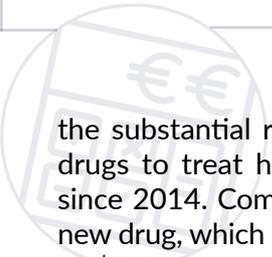
2 Prices should be more in line with the costs of research and development

According to the pharmaceutical industry, prices cover the growing costs of research and development. However, an analysis of these companies' accounts shows that research and development spending levels are lower than both marketing/medical information and profit levels. In 2014, the 10 largest companies invested \$66 billion in R&D while spending \$98 billion on marketing and generating another \$90 billion in profits³. And this data does not take into account

1. Memorial Sloan Kettering Cancer Center's Center for Health Policy & Outcomes, Peter B. Bach, Price & Value of Cancer Drug, available at <https://www.mskcc.org/research-programs/health-policy-outcomes/cost-drugs> (accessed 10 June 2019)

2. "The median annual cost of a new cancer drug launched in 2017 exceeded \$150,000, compared to \$79,000 for the new cancer drugs launched in 2013" (IQVIA Institute for Human Data Science, Global Oncology Trends 2018 Innovation, Expansion and Disruption, May 2018, p. 2).

3. DiMasi J.A., Grabowski H.G., Hansen R.W., Innovation in the pharmaceutical industry: New estimates of R&D costs, Journal of Health Economics 47 (2016) 20–33, 2016.



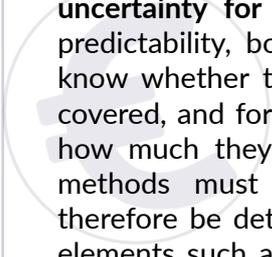
the substantial revenues brought by recent antiviral drugs to treat hepatitis C that came to the market since 2014. Compared to the development costs of a new drug, which are estimated at between \$60 million to \$2.6 billion⁴, the revenues brought by these drugs present a case of excessive profitability as the final price bears no comparison with the development costs that are usually used to justify pharmaceuticals costs.

3 Access to affordable medicines should be promoted globally

The world's population should have access to innovative treatments, including oncology and orphan treatments. Disparities should be avoided across the globe, and amongst European countries. For example, in Eastern Member States of the European Union, the price is one of the factors limiting access to new treatments, especially to oncology or orphan medicines; too high prices can lead to unaffordability for patients or healthcare systems and too low expected prices can lead companies to postpone launch.^{5,6}

Even in Western European countries, the consequences are serious. Because of their cost, access to certain treatments, such as those for hepatitis C, had to be limited in some countries to the most severe patients for purely budgetary reasons.

4 Prices of medicines need to be predictable



The current asymmetry of information has led to totally unbalanced negotiations and to too much uncertainty for all stakeholders. In order to give predictability, both for the industry, who needs to know whether the costs of its investments will be covered, and for health systems, who need to know how much they will have to finance, price-setting methods must be transparent. The price must therefore be determined by objective and verifiable elements such as the amounts invested in research and the target population for instance.

5 A European model for the calculation of fair prices for medicines should reward what (really) matters

AIM proposes a European model for the calculation of fair prices of medicines to reward what (really) matters. Based on a simple and transparent calculation model, the European fair price would cover the real costs of research and production, allow a justified but limited amount of expenditure on sales and medical information, offer reasonable profitability and grant a significant bonus for medicines with an added therapeutic value⁷.

The fairness towards industry would go together with fairness towards health systems.

Taking into account the standard of living⁸, the fair price proposed by AIM would allow member states with the lowest purchasing power to make these medicines available to their patients. Widely used innovative treatments that currently cost between €50,000 and €100,000 across Europe could cost the less wealthy countries a few thousand euros. Making innovative medicines (more) affordable will allow them to be used by a larger number of patients. Hence global health expenditures and revenues of the industry should not be significantly affected, but the impact on access would be huge! Even if full transparency is the ultimate objective, it may, in practice, not be possible. Allocating the R&D costs of all failures to various successful drugs without requiring double payment can be extremely complicated for a company, even in good faith. It is therefore necessary to provide for a system that encourages transparency but that does not depend on it. AIM proposes therefore to allow a lump sum of €250 million for the R&D for each new drug and to determine in advance, based on theoretical prevalence, the amount of R&D for the treatment of a single patient.

Sponsors will be allowed to charge real occurred expenses and to document -in full transparency- the amount they spent on research (with a €2,5 billion cap) or a smaller target population (and

4. Van der Gronde T., Uyl-de Groot C.A., Pieters T., Addressing the challenge of high-priced prescription drugs in the era of precision medicine: A systematic review of drug life cycles, therapeutic drug markets and regulatory frameworks, PLoS ONE 12(8): e0182613. 2017, available at <https://doi.org/10.1371/journal.pone.0182613>

5. European Cancer League Let's talk access! White paper on tackling challenges in access to medicines for all cancer patients in Europe, October 2018, p. 9, available at <https://www.europeancancerleagues.org/wp-content/uploads/ECL-Lets-Talk-Access-White-Paper.pdf>

6. World Health Organization, Technical report - Pricing of cancer medicines and its impacts, May 2018, pp. 75-76, available at <https://apps.who.int/iris/bitstream/handle/10665/277190/9789241515115-eng.pdf?sequence=1&isAllowed=y>

7. European average fair price = real R&D costs/number of patients + real production and overhead costs + sales and medical information (limited to 20% of R&D) + profit before tax (8% of total costs) + innovation bonus (from 5 to 40% of total costs depending on therapeutic value)

8. Eurostat, GDP per capita in PPS, 2018, available at <https://ec.europa.eu/eurostat/web/products-datasets/-/tec00114>

therefore the amount per patient has to rise). In AIM's model, the amount of R&D for the treatment of a single patient would range from 20€ to 1200€ (according to the amount of R&D spent) for a disease with a high prevalence. For an ultra-rare disease, the amount of R&D for the treatment of one patient could rise up to 1 million€ to be spread on the duration of the treatment. For a life-long treatment, the model would consider a 10-year duration, meaning a cost for R&D around 100.000€ per year.

An additional safety net could be added by capping the average European price at the price in countries outside Europe with a comparable standard of living and health system (Canada, Australia and New Zealand), unless the company can demonstrate that this price does not cover the costs.

6 *Prices must take added therapeutic value into account*

In order to get value for the patient, the price must also take into account the relevant added therapeutic value of the new drug. An «innovation bonus» of 5 to 40% will be allocated to medicines according to their added therapeutic value compared to alternatives (if available) already on the market. For companies, this major additional revenue will be an incentive to innovate and for Member States and patients, the extra cost paid for a truly innovative therapy will be offset by the benefits for health and society.

7 *The new model should be subject to some flexibility*

Assessing the target population of a drug and its evolution over time with the arrival of competing drugs for the same patients and with the new indications that will be developed is an almost impossible exercise. In addition, the calculated price will not necessarily be the final price applied in each country but will be the maximum price in that country,

companies and payers needing to be able to further negotiate. The lower end of the range for the target population (the most restrictive) can therefore be used, allowing a higher price and more negotiation space. An additional mechanism can be provided that would reduce the price as soon as the amount of R&D has been fully paid for.

8 *Corrective measures against parallel trade and shortages of medicines must be introduced*

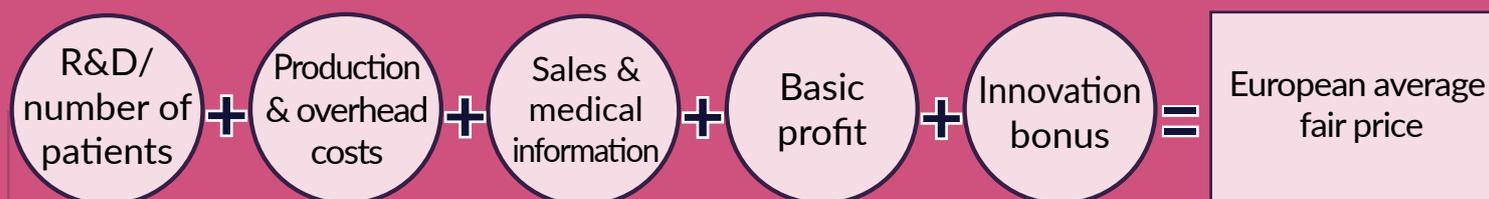
The model could be applied to all new medicines for human use centrally registered in Europe at European Medicines Agency (EMA) level⁹, with priority given to oncology and orphans if a progressive implementation is considered useful. The model should therefore apply to all European member states. The calculation method will however only give an average European fair price that will need to be adapted to each country taking into account the standards of living. This will lead to very different prices amongst member states. Companies could react by limiting supplies for their products (applying quotas), which in turn would lead to shortages in countries. These shortages would undermine the goals to be achieved with the model. Measures to prevent other adverse effects such as parallel trade should also be taken at European level, preferably with the cooperation of the industry.



9. Compulsory for human medicines containing a new active substance to treat human immunodeficiency virus (HIV) or acquired immune deficiency syndrome (AIDS); cancer; diabetes; neurodegenerative diseases; auto-immune and other immune dysfunctions; viral diseases, for medicines derived from biotechnology processes, such as genetic engineering, for advance-therapy medicines, such as gene-therapy, somatic cell-therapy or tissue-engineered medicines and for orphan medicines (medicines for rare diseases).

AIM calls for action:

1. That the Commissioner for Health and Food Safety sets up a High-Level Working Group on fair pricing gathering all relevant stakeholders: payers, patients, consumers.
2. That the European Commission reflects on how the proposed fair pricing model could be applied to the regulatory framework especially at the central registration at European Medicines Agency (EMA) level; gradual implementation in oncology and rare diseases could be considered.
3. That the European Commission completes as soon as possible its review of the incentives systems for pharmaceuticals as it is the backbone of fair rewards for innovation in the pharmaceuticals market
4. That the European Commission undertakes a study on price transparency, indicating ways forward to support the key elements of this proposal, with particular attention to state-of-the-art and robust methods for the calculation of R&D and production costs in the pharmaceutical sector and to comparative profit levels linked to R&D intensity between the pharmaceutical industry and other industries
5. That the European Parliament develops an own-initiative report on the topic of fair pharmaceutical prices, taking particularly into account the importance of transparency of R&D costs, of prices as well as practical and legislative issues to overcome when dealing with the topic.
6. That the European Parliament and the European Council adopt a balanced legislation on health technology assessment at EU level taking into account national specificities, as this will provide the much-needed basis for the assessment of the added therapeutic value of medicinal products
7. That the Council exchanges on lessons learned from voluntary cooperation exercises in order to assess the best way forward, with a view to overcoming isolated Member States collaboration and reaching fair prices across the board in the future
8. That the Institutions of the European Union develop measures to prevent parallel trade in order not to jeopardize the effectiveness of the «maximum fair European price calculation model».
9. That the European institutions take note of the global efforts to reach pharmaceuticals price fairness and convene regular update meetings with the World Health Organization on the progress of the implementation of the calls contained in the WHO Resolution on Improving the transparency of markets for medicines, vaccines, and other health products, while extending its reflection to the question of the transparency of costs of research and development.
10. That a strategic alliance of all stakeholders is created in order to structure civil society's expectations. We need to come together to fulfil the ambitions outlined in the paper and undertake the successive steps to make them reality.



1. Amount of R&D

The aim of the model is to cover the real costs incurred and to reach transparency in the price setting of medicines. It should also incentivize investments of revenues in R&D to develop self-originated new chemical entities, instead of excessively priced speculative buyouts of other (small) companies.

The R&D amount will range from €250 million to €2,5 billion:

- A lump sum of €250 million will be allowed for each new drug. According to various sources^{10,11}, this amount covers the lower range of the investment in research needed to bring to the market a new drug. This lump sum will be enough if the structure (company or organization) is efficient and might even reward more than the cost, stimulating efficient use of funds.
- Companies will be allowed to document that they invested more in R&D costs and require the real amount spent on R&D. However, the total amount justified will be capped at €2.5 billion, considered today as the higher range of the costs.

A specific methodology will have to be developed for reporting the costs of research in order to give full transparency. Specifically, the issues of taking into account expenses not really paid by the sponsors (use of publicly funded research, tax savings and opportunity costs), allocation of costs of failure, as well as value of buyouts have to be addressed.

2. Amount of R&D allocated to Europe (EU 28)

Currently, North America accounts for 64.1% of the sales of innovative medicines (launched 2012-2017) and Europe (top 5 markets) for 18.1%.¹² We assume

the European fair price model will increase the volume in Europe. It should also bring a better global balance. The European population (513,5 million) representing 42% of the population of main markets for the innovative drugs¹³, we assume this will be the corresponding share of R&D for Europe. Even if other regions of the world have access to innovative treatments and if this access increases in the future, this percentage can be maintained. The solidarity objective of the European price must be broader than Europe. Europe can therefore finance more than its share of treatment and help to improve access in other regions of the world.

3. Target population

A. Target population

A theoretical target population according to the prevalence of the disease will be used. The sponsor can document a different (smaller) target population. Prevalence will vary substantially depending on the type of disease. From less than 2 / 100.000 for an ultra-rare disease to over 5% of the population for very frequent diseases.

B. Treatment rate

For each type of treatment, a realistic percentage of the target population will be assumed: 50% for example.

10. "The drug development process requires investments, estimated at between \$60 million to \$2.6 billion,[6;67;68;77]"- Van der Gronde T., Uyl-de Groot C.A., Pieters T. op. cit.

11. "The median cost of drug development was \$648.0 million (range, \$157.3 million to \$1950.8 million)."

(Prasad V., Mailankody S. Research and Development Spending to Bring a Single Cancer Drug to Market and Revenues After Approval. Journal of the American Medical Association Intern Med. 2017;177(11):1569-1575, 2017, available at <https://doi.org/10.1001/jamainternmed.2017.3601>)

12. EFPIA, The Pharmaceutical Industry in Figures, 2018, p. 5 available at https://efpia.eu/media/361960/efpia-pharmafigures2018_v07-hq.pdf

13. Global potential population : EU + Turkey + Russia + US + Canada + Japan = 1,222 billion

C. Market share

Based on historical data, it is assumed that each new drug will have 1/3 of the market, unless horizon scanning clearly states the arrival of more or less new drugs.

D. Duration of treatment

The R&D will be split over the duration of the treatment. For chronic treatment we will assume a 10 years duration of treatment (in line with the patent duration).

4. New indication

For the 2nd and 3rd indication: initial R&D costs will be increased by 10% (unless proved otherwise) and the population added to the 1st indication to calculate a new single price for the drug.

The objective is to discourage “salami slicing” strategies. Therefore, if the second indication is more important than the first, the amount of R&D per patient will decrease significantly (and the price will drop). The motivation to introduce a 2nd and 3rd innovative indication will be strong though, as a different innovation bonus can be granted for the new indication.

From the 4th indication onwards, the price will no longer be recalculated.

5. R&D of alternatives for the same indications

The same goes for competition on the same indication; it is the innovation bonus linked to therapeutic added value that will increase the price of the first to the market and will therefore be the incentive to invest in useful R&D and to come quickly to the market with a different indication..

6. Production and overhead costs

The production costs (including overhead costs) covered will be related to the complexity of the drug's production and the duration of the treatment (i.e. expressed in months of treatment). Cost for orphan drugs are multiplied by 5 in order to consider the limited production volume. Cost of high prevalence diseases might be limited to a lower amount if more realistic.

Composition of the drug	per month of treatment
Chemical ¹⁴	50€
Chemical orphan	250€
Biological	150€
Biological orphan	750€

For gene therapies, the real production costs will be used (according to a specific methodology)

7. Sales and medical information

At the start of the system, 20% of the costs of R&D will be allowed. This should be gradually reduced.

8. Basic profit

A basic profit of 8% of the total costs, in line (upper range) with the return in risky industries.¹⁵

9. Innovation bonus

A Health Technology Assessment (HTA) may be proposed by the company and analysed at the time of registration of the new drug. Depending on the expected therapeutic value of the drug an innovation bonus ranging from 5 to 40% of the costs will be allocated to the company for this indication. Aiming at decreasing duplication in research, it will be given according to following criteria :

The medicine is indicated for a life-threatening or chronically debilitating or rare disease +	5%
The medicine has no alternative +	5%
The medicine is curative	30%
Or if the medicine is NOT curative, the following criteria will apply:	
The medicine has shown progression free survival (PFS) gain vs comparator of at least 6 months or at least 50% more than comparator	5%
The medicine has shown overall survival (OS) gain vs comparator of 1 to 6 months	5%
The medicine has shown overall survival (OS) gain vs comparator of more than 6 months	10%
The medicine has shown major quality of life (QOL) improvement	10%

For oncology, ASCO Value in Cancer Care Framework or the ESMO Magnitude of Clinical Benefit Scale (ESMO- MCBS) could also be used.

The HTA will be analyzed for each new indication and allocated by indication. A drug may therefore have a higher price for its 2nd indication.

14. Cost of sofosbuvir and higher rank of cost for new tuberculosis medicines.

15. Popa C., Holvoet K., Van Montfort T., Groeneveld F., Simoens S. Risk-Return Analysis of the Biopharmaceutical Industry as Compared to Other Industries, *Frontiers in Pharmacology*, 2018;9:1108, 2018, available at <https://www.frontiersin.org/articles/10.3389/fphar.2018.01108/full>

Differential price

Starting from this average price at European level, the price per country will be adapted according to the Gross Domestic Product (GDP) of each country so that the share of GDP spent on innovative drugs would be equal in all member states.

For an average price of 10,000 euros per treatment, prices will range from €2,300 in Bulgaria to €20,500 in Ireland (and €29,500 in Luxembourg).



Detailed example of a fair price calculation for an Hepatitis C medicine

1. R&D

Based on an R&D cost of 800 million euros	
Indication	hepatitis C (all genotypes)
Prevalence	1% of 513,5 million = 5,135 million
Population treated	50%
Market share	1/3
R&D / patient: (800 million x 0.42): (5,135 million x 50% / 3) = 392,60 € per treatment	

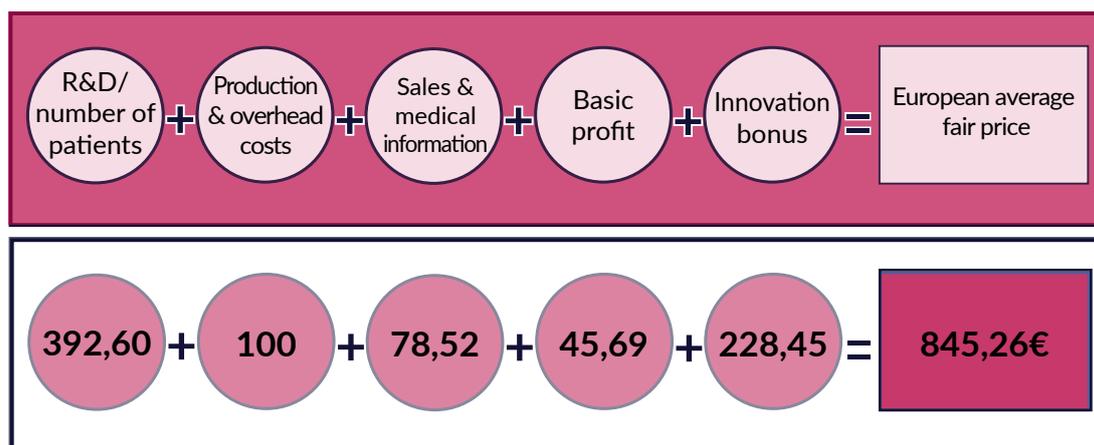
2. Other costs

Chemical 2 months	2 x 50€ = 100 €
Sales/medical information and overheads	20% of 392,60€ = 78,52 €
Basic profit (392,60 + 100 + 78,6) X 8% = 45,69€	

3. Innovation bonus

If maximum therapeutic value:
 $(392,60 + 100 + 78,52) \times 40\% = 228,45\text{€}$

Average price calculation - Hepatitis C Medicine



Differential price:

From 195,84€ in Bulgaria to 1732,97€ in Ireland (and 2495,71€ in Luxembourg).

Based on a 2.5 billion R&D cost, the prices would have been around 2.300€ (average price) which is still very far from the 40,000€ and more that are paid today to have access to this medicine.

Example of a fair price calculation according to real R&D, prevalence, duration of treatment, type of active substance and innovation level:

Most oncological treatments are biologicals. They cost more than 50,000€ today. With the new algorithm, the costs would have been between 5,000€ and 10,000€.

Indication Prevalence Type of treatment***	R&D per patient (global)	R&D per patient per year	Production/ year	Innovation bonus	Fair price/ year for one patient	Current price/ year for one patient
Ultra-rare disease 1/100.000 biological	122.687 € (250 millions)	12.269 €	9.000 (750X12)	15%	29.179 €	200.000€ to 500.000€
Rare disease (including cancer) 3/100.000 chemical	130.867 € (800 millions)	13.087 €	3.000 (750X12)	20%	23.941 €	200.000€ to 500.000€
Frequent cancers 50/100.000 incidence biological	2.454 € (2,5 billions)	2.454 € *	1.800 (150x12)	40%	7.022 €*	30-100.000 €*
Viral and chronic disease (hepatitis, severe asthma,...) 1% prevalence biological	€ 393 € (800 millions)	39,3 €	1800 (150x12)	5%	2.087 €	> 10.000€
Chronic disease (diabetes, Alzheimer's,...) 5% prevalence chemical	€ 245 € (2,5 billions)	24,5 €	120 (10**x12)	40%	221 €	500-1.000€

* costs and prices per treatment

** for very frequent diseases, production costs will drop (/5)

*** For gene therapies, a similar calculation with real costs can be made.



AIM Healthcare and
social benefits
for all

The International Association of Mutual Benefit Societies (AIM) is an international umbrella organisation of federations of health mutuals and other not-for-profit healthcare payers. It has 57 members from 30 countries in Europe, Latin America and Africa and the Middle East. 33 of its members, from 20 countries, are based in the European Union. AIM members provide compulsory and/or supplementary health coverage to around 240 million people around the world, including close to 200 million people in Europe, on a not-for-profit basis. Some AIM members also manage health and social services. Collectively, they have a turnover of almost €300 billion. AIM members are either mutual or health insurance fund.

They are: private or public legal entities; solidarity based; not-for-profit oriented organisations: surpluses are used to benefit the members; democratically-elected members play a role in the governance of the organisation.

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