Pharmaceutical pricing and reimbursement policies in Europe: Challenges and opportunities

Guillaume Dedet, MD, MSc, MPH
Technical Officer
Health Technologies and Pharmaceuticals (HTP)
October 2016
Pharmaceutical policies

• Very few economic sectors are as intensively regulated as the pharmaceutical one is.
• Crossroad sector:
  • Health issue (access, security, vigilance, etc.)
  • Budgetary issue (public expenditure containment)
  • Industrial issue (innovation, economic attractiveness, etc.)
Pharmaceutical economics

• What is different in the pharmaceutical industry that entices many governments to build controls related to price?
  • Unusual purchase decision model (tripartite product selection process) leading to significant market failure
  • Industry cost structure is different (High R&D costs offset by high margins)
  • Important reliance on patent protection
  • Existence of monopsony payers
  • Moral complexity: “the right to access affordable healthcare”
EURO’s member states
EURO’s member states
Healthcare systems in Europe

- High share of public health expenditures (on average 2/3)
- Tax based funded vs. social health insurance systems

<table>
<thead>
<tr>
<th>Model</th>
<th>Countries</th>
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<tbody>
<tr>
<td>National Health Service (NHS)</td>
<td>CY, DK, ES, EL, FI, IE, IT, MT, NO, PT, SE, UK</td>
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<tr>
<td>Social Health Insurance (SHI)</td>
<td>AT, BE, BG, CH, CZ, DE, EE, FR, HR, HU, LT, LU, LV, NL, PL, RO, SI, SK</td>
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S. Vogler et al
Key figures of the pharma industry in Europe

- A major economic sector…
  - Market value: €163b (of which €120b publically funded)
  - 700,000 persons employed
- … and an important burden for European countries budgets
  - Countries spend 1.4% of their GDP on pharmaceuticals
  - Important variation among countries

EFPIA 2014, OECD 2016
Pharmaceutical expenditure as % of total health expenditures

OECD 2014
Private health expenditure as a percentage of total pharmaceutical expenditure
Price differences – ex: trastuzumab

150 mg (21 mg/ml) powder for concentrate for solution for infusion. Loading dose 4 mg/kg. Support dose 2 mg/kg weekly

PPP-adjusted
USD

S. Kniazkov, 2016
The life-span of a medicine – What actions for P&R deciders?

Before Market Authorization
- Horizon scanning

During Market Authorization
- HTA
- Reimbursement
- Pricing

After Market Authorization
- Responsible use
- Real life effectiveness
The life-span of a medicine – What actions for P&R deciders?

Before Market Authorization
- Horizon scanning

During Market Authorization
- HTA
- Reimbursement
- Pricing

After Market Authorization
- Responsible use
- Real life effectiveness
Who are the competent authorities?

- **Market Authorization:**
  - Harmonized at the EU level
  - European Medicines Agency (EMA) supplemented by national regulatory agencies in the member states

- **Pricing and reimbursement:**
  - National competence of the member states
  - Need to comply with the EU Transparency Directive (time line +++)
  - Which institutions?
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<th>Authorization</th>
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<th>Reimbursement</th>
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Reimbursement

- European countries do a rational selection of medicines funded out of public sources via:
  - **Positive lists** ( = formulary):
    - **Definition**: List of medicines that may be prescribed at the expense of the third party payer
    - **Practice**: In 24 EU Member States (in all but DE, EL, ES, UK) - in the out-patient sector
    - Additionally, hospital pharmaceutical formularies
Reimbursement

• **Negative lists:**
  • Definition: List of medicines which cannot be prescribed at the expense of the third party payer
  • Practice: Negative lists are less common (DE, HU, UK)
Reimbursement - copayments

- Reimbursement does not always mean full cost coverage:
  - Copayment as a percentage linked to pathology (FRA, etc.)
  - Copayment as a percentage linked to population groups
  - Copayment as deductibles
  - Copayment as a fee (ITA, AUT, etc.)
How are inclusion/exclusion decisions made?

- In most cases, decision is based on a formal evaluation: **Health Technology Assessment**

  “**Health technology Assessment (HTA) is a multidisciplinary process that summarises information about the medical, social, economic and ethical issues related to the use of a health technology in a systematic, transparent, unbiased, robust manner**”

  WHOCC, 2016
Health Technology Assessment

• In the context of P&R, HTA can rely on:
  • Medical criteria
  • Pharmacologic criteria
  • Medico-economic criteria
  • A mixture of all this
• How can one assess innovation?
Innovation in health products

• Innovation is considered as a positive thing but it remains difficult to define it

• Improvement of relative efficacy/efficiency compared with the current standard of care?

• For manufacturers: any new product that is different from existing ones

• Regulators: provide better outcomes than existing technologies in the same application
## Pricing of medicines

- **There is** medicines price control in the European countries:

<table>
<thead>
<tr>
<th>EU Member State</th>
<th>Pricing of medicines in the out-patient sector</th>
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<tbody>
<tr>
<td></td>
<td>State/Authority</td>
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<tr>
<td>Albania, Belgium, Cyprus, Greece, Lithuania, Luxembourg, Turkey</td>
<td>All medicines</td>
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<td>Denmark*</td>
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<tr>
<td>Austria, Croatia, Czech Republic, Denmark*, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Poland, Spain, Sweden, Switzerland, Slovakia, Slovenia, United Kingdom**</td>
<td>Reimbursable medicines</td>
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<tr>
<td>Malta</td>
<td>Medicines in the public sector</td>
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<tr>
<td>Bulgaria, Iceland, The Netherlands, Norway, Portugal, Romania</td>
<td>Prescription-only medicines (POM)</td>
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*WHOCC, 2016*
Price control mechanisms

In most countries governments control market access and/or pricing of pharmaceuticals using:

- Direct price control
- Indirect price control
- Utilization control
- A mix of all these methods
Direct price control

• Government agencies set drug prices following a defined doctrine
• Company submits a dossier through which it argues how the product should be priced
• Various tools can be used:
  • Example 1: External Reference Pricing
  • Example 2: Value Based Pricing
Direct price control

• Example 1: External Reference Pricing
  • The practice of using the price(s) of a pharmaceutical product in one or several countries in order to derive a benchmark (or reference price) for the purposes of setting or negotiating the price of the product in a given country
  • Almost all the European countries use this tool…
  • … but with important methodology variations (number of reference countries, calculation of the reference price, etc.)
Who is looking at whom?
Direct price control

• Example 2: Value Based Pricing
  • Countries set prices for new medicines (and/or decide on reimbursement) based on the therapeutic value that the medicine offers
  • Value usually assessed through health technology assessment and/or economic evaluation
  • Countries define their own specific doctrine
  • Example: Sweden (TLV)
Indirect price control

- Interventions that direct choices or influence manufacturers’ price expectations

- Example 1: Internal Reference Pricing
  - For a medicine fixed price or amount (called reference price) is determined
  - The insured person must pay the difference between this price and the actual pharmacy retail price of the medicine (in addition to any fixed co-payment or percentage co-payment rates)
  - Can be set at ATC4 or ATC5 level
Where is IRP used?

- Reference price system, reference groups at ATC 5 level
- Reference price system, broader definition of reference groups
- No reference price system
- Not scope of the survey and/or no information available

WHOCC, 2016
Indirect price control

- Interventions that direct choices or influence manufacturers' price expectations

- Example 2: Utilization of economic evaluation
  - In the UK, NICE’s threshold is set at £30,000/QALY
  - Forces companies to integrate in their model a price which is compatible with this threshold
Utilization control

• Ensuring volumes are controlled and drugs go to the right patients (see later on MEAs)
  • “Envelope agreements”
    • Multi-annual contract specifying maximum sales volumes
    • If volumes exceeded: discounts or price rebates
    • Need for epidemiological data
  • Reimbursement for defined diseases stages
  • Reimbursement for defined treatment durations
Particular cases

- The case of in-patient medicines
- The case of generics
- Managed Entry Agreements
Particular cases

• The case of in-patient medicines
• The case of generics
• Managed Entry Agreements
Pricing of inpatient medicines

- Discussions occur generally at the hospital level
- Means of pricing:
  - Direct negotiations with industrials
  - Tendering
- In some countries, some hospital drugs prices are negotiated at the national level ("liste en sus" in France)
Hospitals procurement strategies

Legend:
- Tender
- Tender and negotiation
- No answer

[Map showing procurement strategies across Europe]
Particular cases

- The case of in-patient medicines
- The case of generics
- Managed Entry Agreements
Pricing of generics

• Most countries regulate prices of generics (price linkage):
  • FRA: 60% of originator price
  • LAT: 30% of originator price for the first generic, then 10% less for the followings, then 5%
  • Etc.
Particular cases

- The case of in-patient medicines
- The case of generics
- Managed Entry Agreements
The current situation

- Market Authorization is often granted at earlier stages
- Leads to higher uncertainty on:
  - Effectiveness in real life
  - Future utilization
  - Position in the therapeutic strategy
  - Budget impact
- Higher prices for new medicines
- Higher social demand ("all" and "now")
A possible solution

- **Managed Entry Agreements (MEAs)**, (Klemp et. Al., 2011):
  - “An arrangement between a manufacturer and payer/provider that enables coverage or reimbursement of a health technology subject to specific conditions”.
  - “These arrangements can use a variety of mechanisms to address uncertainty about the performance of technologies or to manage the adoption of technologies in order to maximize their effective use or limit their budget impact”.

Pharmaceuticals pricing and reimbursement policies in Europe
WHO TBS – October 2016
Different types of MEAs

**MEAs**

**Financial based agreements**
- Price volumes agreements
- Discounts
- Capping

**Health outcomes based agreements**
- Payment by result
- Registry
- Coverage with evidence of development
Different types of MEAs

Financial based agreements
- Price volumes agreements
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Health outcomes based agreements
- Payment by result
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- Coverage with evidence of development
Price volume agreements (PVAs)

• Concept:
  • Limit access to the target treatment population
  • For each drug, a tiered repayment structure for different levels of sales is defined ex ante
  • At the end of an agreed period of time, repayments are usually converted into a price cut
  • PVA is an instrument limiting budget impact due to non-approved use

• Very frequently used in Europe (e.g. France ++++)
Capping

- Concept ("utilization capping"):
  - Establishment of a dose cap after which the manufacturer pays for any additional dose required
  - Usually, an average number of doses for one patient is calculated ex ante; if patients consume more, those are provided to the system free of charge
  - Ranibizumab in the UK: capping at 14 doses per patient.
Different types of MEAs

**MEAs**

**Financial based agreements**
- Price volumes agreements
- Discounts
- Capping

**Health outcomes based agreements**
- Payment by result
- Registry
- Coverage with evidence of development
Payment by result

- Concept:
  - Evaluate the rate of “treatment non-responders”
  - For each and every non-responder, the drug manufacturer is either expected to grant a discount to the cost of initial treatment cycles or to refund the full cost of therapy
  - This implies the need to develop strong monitoring systems (registries)
- Used a lot in Italy (AIFA), HepC in France
Coverage with Evidence Development

• Concept:
  • Product is covered or reimbursed but decision (or confirmation) is conditioned upon the collection of additional population-level evidence

• Examples: orphan diseases in the Netherlands
  • Hospitals were required to conduct outcomes research studies to generate evidence on appropriate drug use and effectiveness in daily practice and real-world cost-effectiveness
  • Reevaluation 4 years later: should the medicine be maintained on the reimbursement list?
Which drugs are subject to MEAs?

Ferrario & Kanavos, 2013
A tool which is more and more used

Ferrario & Kanavos, 2015
Where do we go from here?
Recent trends

• The pharmaceutical market has been very affected by the economic crisis
Average annual growth

OECD 2016
Average annual growth 2005-2013

OECD 2016
Recent trends

- The pharmaceutical market has been very affected by the economic crisis
- There has been a clear shift towards more private funding of medicines
Average annual growth public vs. private

OECD 2016
Recent trends

• The pharmaceutical market has been very affected by the economic crisis
• There has been a clear shift towards more private funding of medicines
• But the market is recovering quickly, which raises a lot of questions and interrogations
Future trends and key policy challenges

- The future pharmaceutical spending growth is likely to pick up again.
Future trends and key policy challenges

- Even if the growth in Western Europe is likely to be more limited
Future trends and key policy challenges

• But there has never been as many specialty drugs as today

PricewaterhouseCoopers, 2013
Future trends and key policy challenges

- The number of high cost drugs, their complexity and price will continue to grow
  - HepC
  - Oncology (targeted therapies, biomarkers, etc.)
  - Auto-immune conditions
  - Orphan drugs

IMS, 2014
Future trends and key policy challenges

Orphan drug designation in the US

FDA, 2015
Future trends and key policy challenges

- The number of high cost drugs, their complexity and price will continue to grow

P. Bach, 2014
Future trends and key policy challenges

• What does all this imply?
  • Questioning on the sustainability of these trends in the medium term for countries who can afford new medicines
  • Questioning on the accessibility for the other countries (fairness and justice)
  • A necessary reflection on the recent pricing developments (drugs have today become both too expensive and too cheap)
Medicine price discussion
Innovative medicines deliver value today and long into the future

“For every 1 percent increase in medicine utilization, total Medicare program costs fall by 0.2 percent”

-- US Congressional Budget Office
Innovative medicines deliver value today and long into the future.

“For every 1 percent increase in medicine utilization, total Medicare program costs fall by 0.2 percent.”

UNE EPIDÉMIE DE GRIFFE EN DÉCEMBRE C’EST LE BONUS DE FIN D’ANNÉE QUI TOMBE.

LE CANCER DU SEIN, PLUS IL EST AVANCE PLUS IL EST LUCRATIF.

UNE LEUCÉMIE C’EST EN MOYENNE 20 000% DE MARGE BRUTE.

Signez la pétition pour faire baisser le prix des médicaments sur www.leprixdelavie.com
Why are drug expensive?

• Cost?
• Value?
• Power?
• Prize?

J. Scanell, 2015
Cost of R&D

- We charge high prices because a drug is expensive to develop
- Input-based pricing
- Is this argument valid? Mostly not
Cost of R&D

- Most of research paving the way to new drug discovery is publically funded (85% for cancer, Kantarijan et.al., 2015)
- Industry might actually invest less than 2% of their revenue on basic research (D. Light, 2011)
- The importance today of speculative acquisitions and financialization
- DNDi alternative model

Roy and King, 2016
Cost of R&D vs. financialization

Merck

Lazonick et al., 2016
Cost of R&D vs. financialization

Pfizer

Lazonick et al., 2016
Cost of R&D – Public involvement

- New Molecular Entities come mainly from public research: 75% between 1993 and 2014 (Angell 2014), private sector focused mainly on me-too.

Percentage of new drugs by type in the pharmaceutical industry (1993-2004)

- Variation of existing drugs: 67%
- Standard NMEs: 19%
- Priority NMEs: 14%

Angell, 2004
Cost of R&D – Public involvement

• British Medical Research Council research led to the development monoclonal antibodies in the 70s.

• The US NIH budget for 2016: US$ 32.3b, distributes 50,000 grants and employs 325,000 researchers.
Value

- *This drug is worth the charged price*
- Cost to society if the disease was not treated or treated by the second best therapy
- Is this argument valid? Mostly not
Value

Howard et. Al., 2015
Power

• *My patent protection allows me to charge a lot*

• What is the market willing to pay?

• Is this argument valid? Certainly yes
Drug Goes From $13.50 a Tablet to $750, Overnight

By ANDREW POLLACK  SEPT. 20, 2015
Exclusive: MS drug 'rebranded' – at up to 20 times the price

Pharmaceutical giant withdraws existing treatment to boost profits

Jeremy Laurance  |  @jeremylaurance  |  Saturday 13 October 2012  |  0 comments

12 shares
Prizes

• High prices are the consequence of the need to reward investors

• Incentive-based pricing

• Investment (by venture capital) on R&D is highly sensitive to drug price

• Is this argument valid? Certainly yes
A Pyrrhic victory?

• The question we face: how to ensure that new therapeutic progresses are not a Pyrrhic victory?
Options for the future

• Enhance collaboration
  • PPRI network, CAPR, Fair Pricing initiative (WHO)

• Develop strategic procurement
  • Joint negotiations (BeNeLux), WHO conference (Sept.16)

• Discuss relevance of some patent protection features
  • Data exclusivity periods? Orphan designations? Moral Obligation? Shorter patent protection for me-too medicines?
Options for the future

• Reduce influence of finance in the pharma business model:
  • Ban stock repurchases in the pharmaceutical sector.
  • Link executive compensation to launching new innovative drugs.

• De-linkage
  • Antibiotics ?
Options for the future?

Precision medicine → Precision pricing
Council conclusions on strengthening the balance in the pharmaceutical systems in the EU and its Member States
Medicines in Development By Disease and Phase

Some medicines are listed in more than one category.
If you want to know more

- Please consult our website:
  http://www.euro.who.int/en/health-topics/Health-systems/health-technologies-and-medicines


- dedetg@who.int
Thank you… Questions…