



THE FUTURE OF PHARMACEUTICALS: Generic Medicines Enhancing Pharmaceutical Competition and Ensuring Healthcare Sustainability

Contribution by
THE EUROPEAN GENERIC MEDICINES ASSOCIATION | EGA
to the Public Consultation Process Initiated by the European Commission on
“The Future of Pharmaceuticals for Human Use in Europe”

October 2007



Making Medicines Affordable

The Future of Pharmaceuticals: Generic Medicines Enhancing Pharmaceutical Competition and Ensuring Healthcare Sustainability

1 The Importance of Generic Medicines

1.1 The Role of Generic Medicines

Generic medicines play a key role in ensuring the affordability and sustainability of healthcare systems throughout Europe. Encouraging competition in the pharmaceutical market through increasing the use of generic medicines both promotes cost containment and stimulates the innovation needed to provide added value products.

With a market share of 18% by value, representing nearly half the volume of medicines delivered to European citizens¹, the European generic medicines industry is today a well-established and essential partner in European healthcare. Its role includes:

- offering front-line treatment for key chronic diseases ;
- extending access to affordable quality, safe and effective medicines to more citizens throughout the entire European Union;
- creating savings on public pharmaceutical spending, thus providing budget headroom to finance innovation;
- developing generic medicines with newer formulations and methods of delivery, etc, which provide incremental innovative improvements for patients;
- guaranteeing the sustainability of European healthcare systems by creating competition in the pharmaceuticals markets.

Table 1: Generic medicines offer front-line treatment for key chronic diseases

*Common Chronic Conditions
treated with affordable generic medicines*

■ Cancer	■ Viral Infections
■ Diabetes	■ Bacterial Infections
■ Depression	■ Parkinson's Disease
■ High Cholesterol	■ Epilepsy
■ High Blood Pressure	■ Rheumatism
■ Asthma	■ Pain Relief
■ Osteoporosis	■ Inflammation
■ Gastro-intestinal Disorders	

¹ See attachment 1: Generic Medicines Market Share 2006.



1.2 The Generic Medicines Industry's Contribution to Sustainable Healthcare

The European generic medicines industry's major contribution to European healthcare involves the provision of high quality, cost-effective treatment for many of today's most common chronic illnesses and conditions, such as cancer, diabetes, depression and high blood pressure. Providing sustainable treatment for these illnesses, which are particularly prevalent in older patients, will become increasingly difficult as Europe's population ages. In fact, the rapidly ageing population in Europe, the increase in the prevalence of certain diseases and the rise in prices for originator pharmaceuticals are creating a critical need for higher volumes of more affordable generic medicines. A sustainable European generic medicines industry is – and will continue to be – a crucial partner² in efforts by European Member State to contain healthcare costs now and in future.

1.3 Generic Medicines: Key Players in the EU Registration system

The importance of generic medicines can also be seen in the fact that in 2006 generic medicines represented nearly 75% of all new applications finalised under the Mutual Recognition Procedure, and 70% of the new decentralised applications actually finalised³. Currently four applications have been submitted for marketing authorisation using the centralised procedure and two positive opinions have already been received from the CHMP.

1.4 New Growth Areas for the Generic Medicines Industry

European generic pharmaceutical companies are now expanding into new areas of pharmaceutical development, such as new formulations and biosimilar medicines, and are moving onto new, fast growing pharmaceutical markets like China, the Middle East, and Russia.

Similarly, the development of biosimilar medicines can be seen as a form of 'economic innovation'. By 2010, high priced biopharmaceutical products will make up 25% of pharmaceutical sales and 50% of all new marketing applications. As a result, biosimilar medicinal products will soon become a necessary component of future healthcare management policies as even a 20% price reduction on six off-patent biopharmaceutical products would save the EU some €1.6 billion each year. Already today, Europe can be seen as the world centre for research, development and production of biosimilar medicines.

1.5 Composition of the Generic Medicines Industry

The generic medicines industry is a highly diverse and competitive sector, ranging from global players represented in most European countries⁴ to local players represented in no more than one or two. The generic pharmaceutical industry in Europe employs approximately 100,000 people in different areas such as development, production and

² "With expensive drugs increasing healthcare costs, generic medicines have a critical role in the European market. Generics are widely regarded as the best method to allow access to safe, effective and high-quality drugs at affordable prices to a vast majority of patients. They also play a vital role in the development of sustainable healthcare models by imposing a direct influence on pharmaceutical spending.", Frost & Sullivan, "Pricing and Reimbursement Issues for Generics and Biosimilars", Dec 2006.

³ See attachment 2: Generic Medicines % in MRP/DCP

⁴ The top 20 generic companies are represented in most of the 27 EU Member States



sales functions. During 2006 sales of the top 20 generic molecules attained a total value of €3,950 billion and a volume of 22,625 billion standard units⁵.

The penetration of generic medicines varies between EU Member States from as little as 10% by volume in countries such as Italy and Spain, to over 50% in Scandinavia, the UK and Eastern European countries. Variations in the level of generic penetration is significant, due not only to different historical and economic backgrounds, but also to the public policies employed to promote them, ie, whether governments choose to take a more or less interventionist approach to their respective markets to create a more sound environment to ultimately facilitate the advancement of generics in these markets.

1.6 Competitiveness and Difficulties for the European Generic Medicines Industry

As is the case with the prices of patented pharmaceuticals, prices of generic medicines differ from Member State to Member State as a result of varying healthcare systems and functioning of the distribution chain, such as differences in pharmacists' and wholesalers' margins. Significantly, average ex-factory prices of generic medicines are lower in Europe than in the USA. This is despite lower volume share, higher 'operating costs', more IP hurdles, and the lack of a single market environment for generic companies in European markets.

Table 2: Comparison of EU and USA Market Environments for Generic Medicines

Market Environment for Generic medicines	USA	EU
Generic Medicines as % of Total Pharmaceutical Market Volume	63%	42%
Basic Product Patent	Yes 20 years	Yes 20 years
Data Exclusivity Blocks market authorisation procedures for generics	5 years	8+2+(1) years
Patent Extensions Supplementary Protection Certificates, etc.	Yes 14 years Maximum	Yes 15 years
Bolar Provision Right to perform generic R&D before patent expiration	Yes	Yes (but no correctly implemented in all member states)
Immediate Generic Competition Upon patent expiration	Yes	No (due to Price & Reimbursement procedures in many member states)
Fees for Generic Registrations	No	Yes (between 80.000 - 120.000 Euros)
Free Price Competition	Yes	No (not in most member states)
Harmonized Regulatory and IP Requirements	Yes	No

⁵ See attachment 3: Top 20 Generic Molecules



Moreover, the European generic medicines industry is currently operating under increasing cost pressures as a result of higher regulatory requirements for bioequivalence, added GMP requirements, and stricter pharmacovigilance rules. At the same time, the generic medicines industry is constantly facing price reductions and increased competition from outside Europe, where more flexible labour, tax and environmental conditions offer competitive advantages over European producers. In contrast to the European research based industry, governments and European Institutes provide no incentives to encourage development and production of generic medicines.

2 Market Barriers to Competition from Generic Medicines

2.1. Lost Savings Due to Inefficient Pricing and Reimbursement Policies

The potential for savings through competition from generic medicines is not being maximised in Europe. Generic medicines can still provide over 40% more savings to European healthcare budgets⁶. For the full potential of savings and headroom for innovation to be realised, it is essential to develop a strong, sustainable European generic medicines industry. To achieve this, EU Member States and the European Commission should work together to implement G10 Recommendation 4⁷. The EU High Level Forum on Pharmaceuticals has further endorsed the importance of to provide incentives to competition from generic medicines so as to encourage innovation and cost containment, as well as to innovation⁸.

In 2006, a study from the University of Leuven pointed out that:

“Generic medicines create major savings for healthcare providers and stimulate innovation. But, the European Union is not maximising its full potential in generic medicines. Added savings of 27%-48% could be attained if the appropriate measures were taken by EU countries.”

The Leuven university study also emphasises that:

“The ability of the (European) generic medicines industry to deliver competitive prices can only be achieved and sustained if it is assured a high volume of the pharmaceutical market. High volume is dependent on demand side measures.”

⁶ See attachment 4: Europe’s potential to more savings

⁷ *“To secure the development of a competitive generic market, Member States - facilitated by the Commission - should explore ways of increasing generic penetration in individual markets (including generic prescribing and dispensing). Particular attention should be given to improved market mechanisms in full respect of public health considerations.” Recommendation 4: G10 Report June 2002.*

⁸ *“Create the right environment for price competition. Direct or indirect controls of prices, reimbursement and expenditure are clearly relevant in a market with low price-sensitivity and high market power of manufacturers, in particular for medicines under patent protection. In situations where competition between different products is possible, e.g. when generics enter the market, open price competition may lead to good containment and significant reduction of prices and costs in a less cumbersome way.” Progress Report Pharma Forum June 2007*



In order to obtain the potential savings for a sustainable healthcare system within the 27 EU Member States, the study recommends several policy measures⁹ including: encourage price differentiation/competition within the existing regulatory frameworks, remove financial disincentives for pharmacists to dispense generic medicines, provide incentives for patients to demand generic medicines and provide incentives for physicians to prescribe generic medicines.

Indeed, a key step toward ensuring sustainable healthcare in an aging population that is increasing the demand for pharmaceuticals would be to assist physicians in understanding the economical value of generic medicines as first-line therapies.

2.2. The Need for Automatic Price Approval for Generic Medicines to Increase Competition and Access

Substantial savings for healthcare systems, insurers and patients are lost as a result of unnecessary pricing and reimbursement procedures¹⁰ applied to generic medicines. Although the need to review the application for the price and the reimbursement level of a new originator product can be justified by the necessity to assess its cost-benefit advantages, no such procedure is necessary for generic medicines which have well-known properties and profiles. Consequently, generic products which have been granted a Marketing Authorisation (MA) should be given automatic pricing and reimbursement approval and substitution status to avoid delaying the availability of cost-effective generic medicines. Competition from generic medicines is immediate in countries such as Denmark and the UK, where price controls do not exist. However, generic products often experience delays in countries where price controls are practiced¹¹. For example, a generic medicine approved through the same European registration procedures is typically launched one year earlier in the Netherlands than in Belgium due to Belgium's long timelines for price and reimbursement approvals.

2.3. Price Linkage between Reference Product and Generic Alternatives

Similarly, once a medicine is off patent, the price of its equivalent generic medicines should be set independently from the off-patent reference product and from other generic formulations. For example, linking the price of generic medicines to a constant set percentage of the originator product (for example, always 25-50% lower than the originator) is anti-competitive and endangers the security of supply of generic medicines. Such linkage enables originators to force generic medicines competitors off the market by constantly lowering prices to the point where generic medicines (forced to sell at a fixed percentage below the originator) can no longer afford to enter onto – or to stay on – the market.

Examples of free competition in Member States such as Sweden, Denmark and the UK show that free pricing encourage competition, which results in lower prices and higher savings. Indeed, there should be no need for complicated cost containment measures

⁹ For all recommendations see the report *“Sustainable Generic Medicines Markets in Europe”* p.75 - 77, Prof. S. Simoens et al, April 2006

¹⁰ *“Respecting national competence, Member States should examine the scope for improving time taken between the granting of a marketing authorisation and pricing and reimbursement decisions in full consistency with Community legislation. To do this with a view to securing greater uniformity and transparency between markets and rapid access of patients to medicines”, Recommendation 3: G10 Report June 2002.*

¹¹ See Attachment 6: Timelines P&R for Member States



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such as tendering or comparative price baskets. Instead, the pharmaceuticals market should be driven by free competition.

3 Regulatory Barriers to Competition from Generic Medicines

3.1. Disharmonised implementation of the new pharmaceutical legislation

European generic medicines companies are currently having to deal with the problem of disharmonised implementation of the new pharmaceutical legislation in the different Member States. The disparity in implementation causes late approvals of Marketing Authorisation and additional administrative hurdles, which delay competition from generic medicines.

3.2. Lack of resources

Of key concern to the generic medicines industry is the lack of resources available to the national competent authorities to run the Marketing Authorisation process efficiently and to meet the timelines of the relevant procedures. The significant delays for obtaining a date for submitting an application to start the DCP procedure, the important delays for updating Assessment Reports to start a Repeat Use (RU) MRP, and the limited availability of the national medicines agencies to serve as the RMS constitute an important barrier to the introduction of generic medicines onto the market. The increasing number of variations, including the approval process of those which are not related to public health protection, demands significant recourses from the authorities and of industry which might otherwise be used to better effect. The lack of flexibility in handling administrative changes, like a change of company address, must be dealt with in the revised variations regulation.

3.3. Second Medical Use Patents

Second Medical Use Patents¹² also constitute new barriers to the registration of generic medicines and particularly of biosimilar medicines under the centralised procedure (CP). Since second medical use patents differ from country to country, and since it is not permitted to carve out the infringing parts from the product information before marketing at national level, access to the single market through the CP is seriously hampered. This constitutes a competitive disadvantage especially for the biotechnology industry as derived biosimilar medicines can only be approved centrally. The proposal to submit duplicate applications in order to provide access to indications not covered by a use patent in certain Member States will place additional administrative and financial burdens on our industry. A change in the legislation is desperately needed to allow the approval of the full Summary of Product Characteristics and the removal of the infringing product information only in the markets covered by the use patents.

¹² According to case law second medical use patents cover a) different new indications, b) different patient groups, c) same indication, same patient groups but different functional effect, d) different mode of administration)



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3.4. Lack of appropriate pharmacovigilance rules

It is well accepted that all industry sectors should follow the same pharmacovigilance rules, however, pharmacovigilance requirements should be adapted appropriately for active substances that have a well-established safety profile across all sectors of the industry. Indeed there remains a great deal of room for improving the current system to:

- simplify, rationalise and strengthen the system;
- make more efficient use of the resources available within industry and the Competent Authorities; and to
- avoid jeopardising – in fact, to even improve – public health.

3.5. Lack of appropriate implementation of Bolar provision

Article 10.6 of Directive 2001/83 as amended – known as the ‘Bolar provision’ – has not been properly implemented in all Member States, and certainly not in a harmonised manner. Consequently the EU does not as yet constitute a safe harbour for developing generic and biosimilar medicinal products. In order to attract more clinical trials to the EU our industry needs a harmonised and safe environment for all tests and trials in view of applications for a marketing authorisation in the EU and worldwide. This will additionally help to secure the EU’s worldwide leadership in regulated biosimilar medicines development.

3.6. A need for Global reference product

Indeed, more and more pharmaceuticals and biopharmaceuticals are based on a global development process and approved in the regulated markets based on a single dossier. At a certain point in time these medicinal products will become reference products for generic and biosimilar applications. In order to avoid the repetition of unnecessary tests and trials on animals and humans and to reduce the administrative and financial burden on our industry, a future EU legal environment should foresee the possibility to cross-refer to those global reference products.

4 IP Barriers to Competition from Generic Medicines

4.1. ‘Innovation’, Evergreening and the Patent & Pricing Systems

The European generic medicines industry heartily endorses pharmaceutical innovation, and fully recognises incremental as well as breakthrough innovation. The European generic medicines industry is, however, concerned that certain product changes which claim to bring innovation in reality offer little added benefit to patients and are, in fact, rendered less advantageous to patients by their higher prices. Such products are actually designed to prolong the life cycle of the originator product and to hinder competition from generic alternatives.

Partial blame for this problem lies with the patent system, which may not always show sufficient rigour when assessing patent applications. The current patent granting process and the weak application of the inventive step principle leads to ‘false’ or ‘weak’ patents leading to ‘ring-fencing’ against competition. This situation has



produced an environment of increasing litigation within the pharmaceutical industry due to dubious secondary patents, frivolous litigation and the generous issuance of injunctions. A strong patent system requires rigorous application of solid criteria.

Limited or marginal changes to existing medicines designed to obtain extensions to existing patents – a practice known as ‘evergreening’¹³ – should not be rewarded in the pricing and reimbursement system so as to allow for improved economics throughout the healthcare system by increased competition from generic medicines. Patents, which should always have an inventive step in technical terms, do not always measure added therapeutic value. In all cases innovation is only of value if it can demonstrate *added therapeutic benefit to patients* (compared to therapeutic alternatives), ie, relative efficacy.

4.2. IP, Innovation and Competition: Getting the Balance Right

Intellectual property protection has increased substantially over the past 15 years in the European pharmaceutical sector, making the EU the most IP protected region in the world for pharmaceuticals¹⁴. Despite this significant increase, the EU has not witnessed a corresponding improvement in the overall rate of innovation in the sector. Indeed, whilst the industry’s overall sales have increased,¹⁵ the industry’s relative rate of competitiveness has fallen in comparison to other regions, especially the USA.

Steps to improve the overall competition of the European innovative sector should therefore no longer focus on IP issues, but rather should concentrate on:

- creating an EU equivalent to the United States National Institutes of Health, since funding from the NIH has been a principal motivator for attracting pharmaceutical research to the USA¹⁶;
- establishing better links between science and business;
- improving access to finance in the capital markets;
- implementing substantial changes in the business model of R&D companies to focus on research niches¹⁷;
- supporting added value innovation through the pricing systems to bring added clinical value to patients;¹⁸

¹³ *“More and more drug makers are turning to reformulation to prolong the lifecycle of their top sellers and protect precious revenue from generic copies, as well as supplement dwindling pipelines.” In-Pharma – 2007*
“Nexium® costs much more than Prilosec®, which is now available in both a generic and over-the-counter. PAL’s lawsuit claims AstraZeneca misled consumers into thinking the drug was an improvement over Prilosec, even though clinical studies show that Nexium® is no more effective than Prilosec®.” PAL Director Alex Sugerman-Brozán interviews Jerry Avorn, MD (2004) author of “Powerful Medicines: The Benefits, Risks and Costs of Prescription Drugs”

¹⁴ See attachment 5: Increased protection for Pharmaceuticals

¹⁵ See attachment 6: Pharmaceutical Sales are rising in Europe and Pharmaceutical Sales easily cover R&D costs

¹⁶ *“Government sponsoring and promoting of research and innovation will presumably increase the incentives for investment... In the US, the National Institute for Health (budget \$28 billion) is an enormous help in itself and in light of the contribution made to training scientists and developing a culture of scientific innovation.” Key Factors in Attracting Internationally Mobile Investments by the Research-Based Pharmaceutical Industry, NERA March 2007.*

¹⁷ *“Industry consultants have argued that drug companies are highly inefficient manufacturers, in part because they have traditionally made such significant profits and cost control has been less relevant” FT Tuesday Sep 18 2007*



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- ensuring immediate and strong competition from generic medicines to original products once patents have expired.

5 Counterfeiting

Although the situation could one day change, generic medicines are currently not counterfeited in the European Union. This is due to the low prices of generic medicines resulting from the fierce competition on European markets.

However, the European generic medicines industry prefers not to be complacent, and believes that action aimed at securing the current supply chain between licensed operators is the most effective means to thwart current and potential threats.

Measures should focus on strengthening the cooperation and on improving the transparency of operations between all actors in the pharmaceutical supply chain, ie, manufacturers, wholesalers, dispensers, patient groups and national authorities.

Technical options may not provide the answer to counterfeiting and several questions remain open about this approach, such as:

- What costs are associated with this type of solution?
- Can we rely on the safety and integrity of the proposed technical options?
- Are technical options serving purposes other than counterfeiting, like controlling parallel trade?

6 Information to European Citizens on Diseases and Medicinal Products by Industry

Direct information about medicines to patients from industry should be limited and controlled as it could lead to product promotion to patients. This activity could serve the interests of industry rather than the interests of patients and would favour companies with high marketing budgets and could be used to manipulate the demand for medicines by European citizens.

Pharmaceutical companies should be allowed to post product information on their websites in line with the registration documentation after approval by the competent authorities. As this is already the practice in some EU Member States, there is no need to expand the current European Regulation, but rather a need to clarify and harmonise legislation throughout Member States.

¹⁸ "Public data on the number of subjects in clinical tests suggest that only 20% of the R&D budget allocated to clinical testing is used for drugs which the FDA categorizes as offering "significant improvement" compared to marketed products-the other 80% is used for products which do not offer a significant improvement" A. Hollis, University of Calgary, Institute of Health Economics, 2005.



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7 Conclusion and Recommendations

In line with the points raised above, the following measures outlined in the following table should be adopted to stimulate competition, innovation, and access in the EU pharmaceutical sector:

Measures to Stimulate Competition, Innovation, and Access to Medicines in the EU Pharmaceutical Sector

1. Introduce a coherent generic medicines policy, which includes providing incentives for physicians to prescribe generic medicines, removing disincentives for pharmacists to dispense generic medicines, and providing information and incentives to patients to ask for generic medicines.
2. Grant automatic pricing and reimbursement approvals and substitution status for generic medicines once they have obtained market authorisation (MA).
3. Structure reimbursement levels according to the clinical relevance and pharmacotherapeutic value of one product over another and preclude switching to non-added value higher-priced patented products away from lower-priced generic medicines or existing alternatives.
4. Create pricing & reimbursement systems that ensure free competition between generic medicines and originator products as a mean of ensuring cost containment and healthcare sustainability.
5. Ensure the efficient use of necessary resources at national medicines agencies and improve the flexibility in administrative variations and in pharmacovigilance.
6. Adapt E.U. regulatory legislation to deal with second medical use patents in relation of SmPC's, particularly under the centralised procedure.
7. Improve the assessment of patents by the patent offices, in particular by strengthening the criteria for assessing the inventive step.
8. Introduce targeted and proportional measures to deal with the counterfeiting of medicines by strengthening the cooperation and improving the transparency of operations between all actors in the pharmaceutical supply chain.
9. Clarify and harmonise the legislation on information provided to patients by industry in the different Member States without expanding the European Regulation, allowing companies to put on their websites product information in line with registration documents after pre-approval.

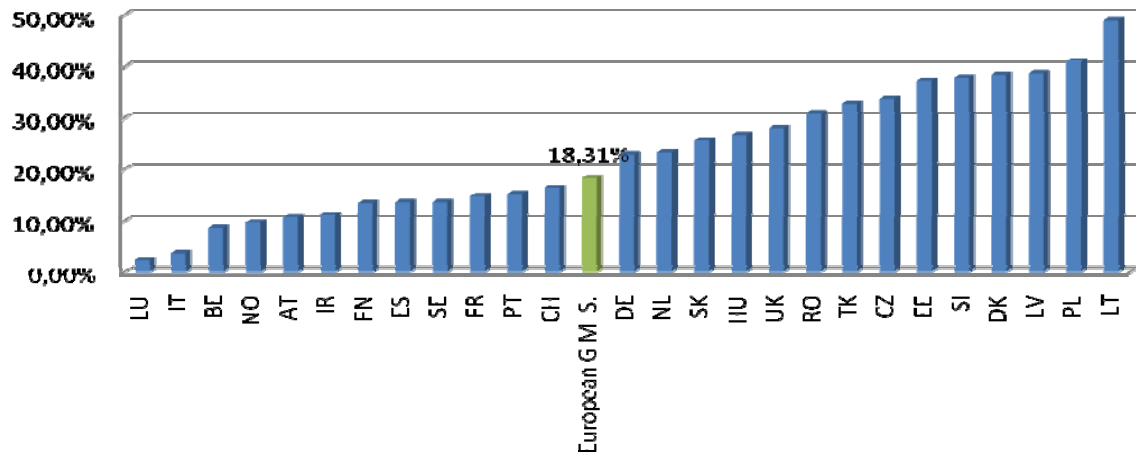


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Attachments to EGA Contribution

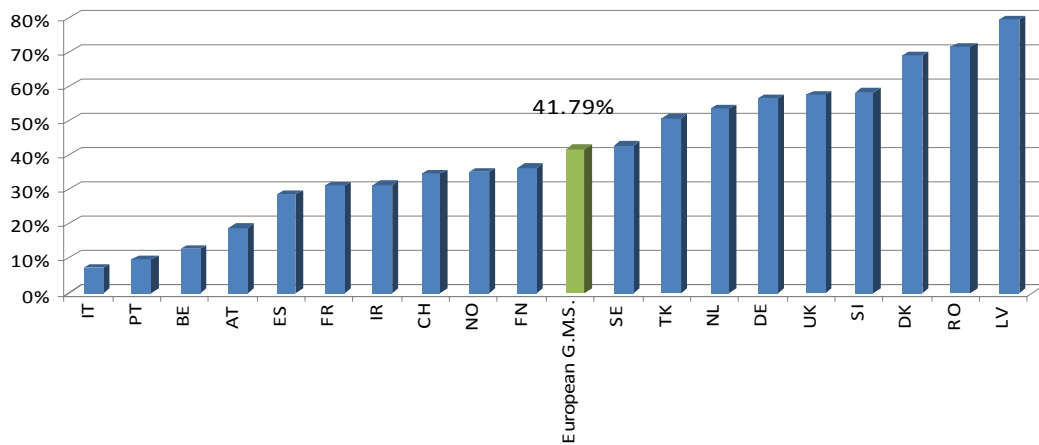
Attachment 1: Generic Medicines Market Share 2006

Generic Market Share 2006 (value)



Source: EGA internal survey

Generic Market Share 2006 (volume)



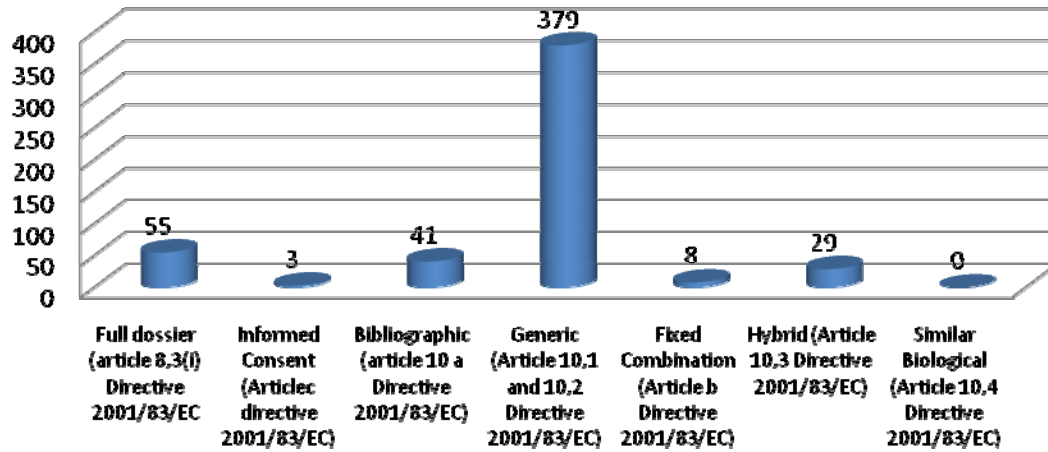
Source: EGA internal survey



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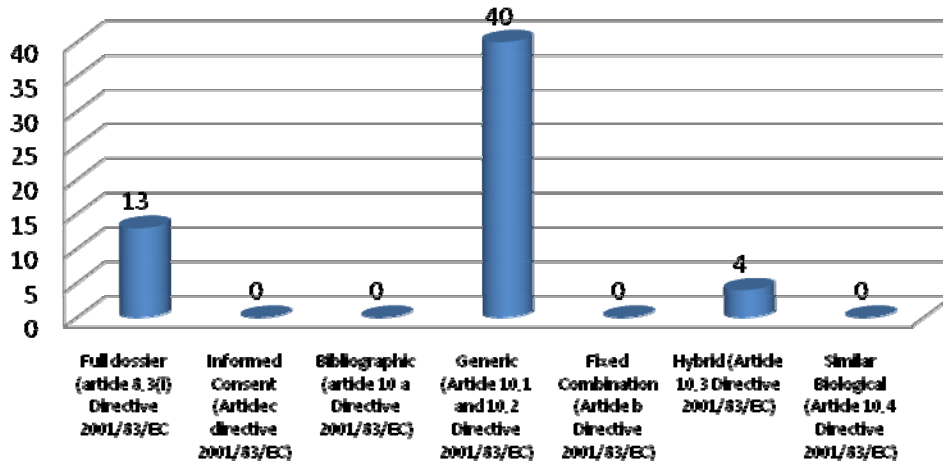
Attachment 2: Generic Medicines % of MRP/DCP

Mutual Recognition New Applications finalised in 2006



Source: CMDH - MRP/DCP and CMD (h) referrals - Statistics for 2006

Decentralised New Applications finalised in 2006



Source: CMDH - MRP/DCP and CMD (h) referrals - Statistics for 2006



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Attachment 3: Top 20 Generic Molecules (EGA internal survey - retail only)

TOP 20 GENERIC MOLECULES	TOTAL 2006 (VALUE)	Total 2006 (S.U.)
TOTAL	€3.950.000.000	22.625.000.000
OMEPRAZOLE	€ 794.177.000	1.702.885.000
SIMVASTATIN	€ 510.338.000	1.888.632.000
AMOXICILLIN	€ 261.075.000	1.179.929.000
PARACETAMOL	€ 206.389.000	5.005.972.000
CITALOPRAM	€ 194.985.000	498.788.000
AMLODIPINE	€ 188.828.000	668.210.000
RAMIPRIL	€ 182.617.000	942.595.000
GABAPENTIN	€ 180.344.000	393.526.000
PAROXETINE	€ 150.782.000	325.531.000
CLAVULANIC ACID	€ 147.276.000	368.418.000
ENALAPRIL	€ 136.555.000	968.122.000
HYDROCHLOROTHIAZIDE	€ 135.670.000	1.110.072.000
METFORMIN	€ 130.781.000	2.505.250.000
PRAVASTATIN	€ 115.057.000	230.958.000
LISINOPRIL	€ 114.188.000	752.095.000
RANIDITINE	€ 106.939.000	605.358.000
ATENOLOL	€ 102.931.000	1.697.780.000
BISOPROLOL	€ 97.627.000	812.357.000
ALENDRONIC ACID	€ 97.448.000	17.523.000
METOPROLOL	€ 96.199.000	951.592.000

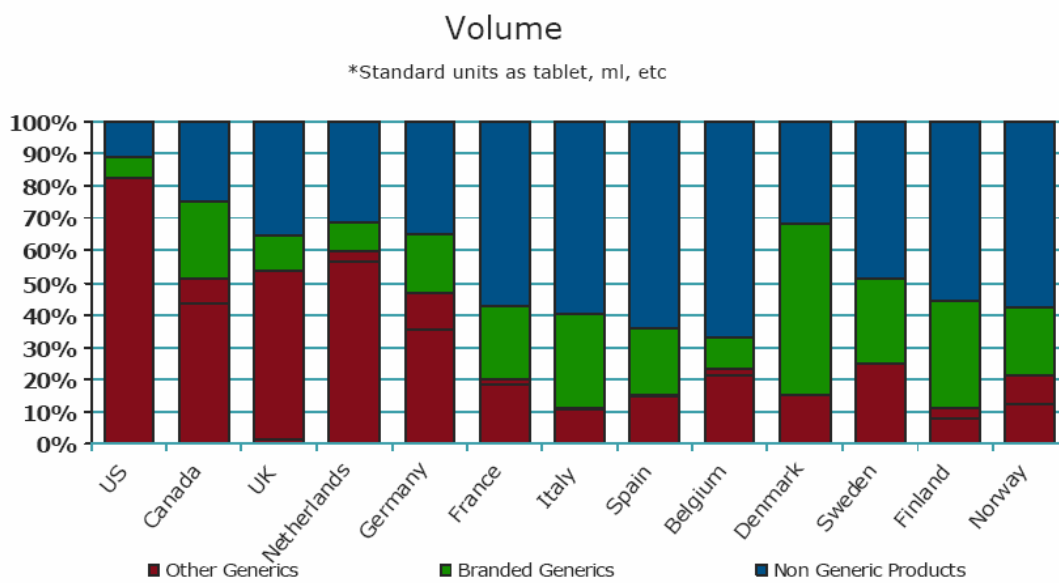
Source: EGA internal survey 2006
Based on IMS figures



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Attachment 4: Europe's potential for more saving

This graphic shows the potential of generic medicines in the non-protected market in different Member States and in the USA



Source: IMS Health, 22 September 2006 (IMS Health MIDAS MAT/1Q06 Ethical Market only (Nordics-PREVIEW (MKTSG4))



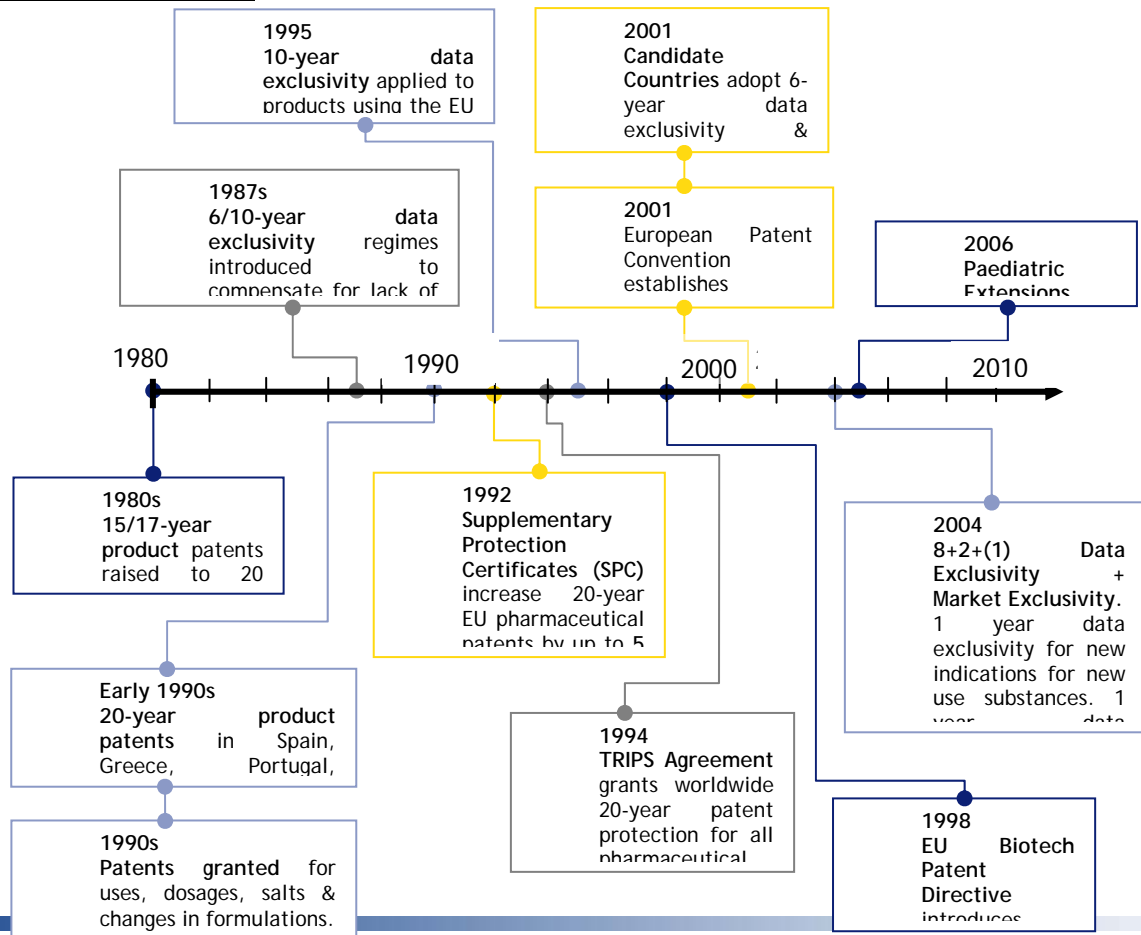
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Attachment 5: Increase in protection for Pharmaceuticals

<i>Pharmaceutical Properties Eligible for Patenting*</i>	
1980s	1990s
<ul style="list-style-type: none"> ■ Primary uses ■ Processes and intermediates ■ Bulk forms ■ Simple formulations ■ Composition of matter 	<ul style="list-style-type: none"> ■ Primary uses ■ Processes and Intermediates ■ Bulk forms ■ Simple formulations ■ Composition of matter ■ Expansive numbers of uses ■ Methods of treatment ■ Mechanism of action ■ Packaging ■ Delivery profiles ■ Dosing regimen ■ Dosing range ■ Dosing route ■ Combinations ■ Screening methods ■ Chemistry methods ■ Biological target ■ Field of use

*"Evolution of IPR and Pharmaceutical Discovery and Development", presentation by Eric Larson, Senior Director, Groton Site Head, Pfizer Global Research & Development (22 October 2001). Viewed on 24 May 2007 at: www7.nationalacademies.org/step/Larson_ppt.ppt.

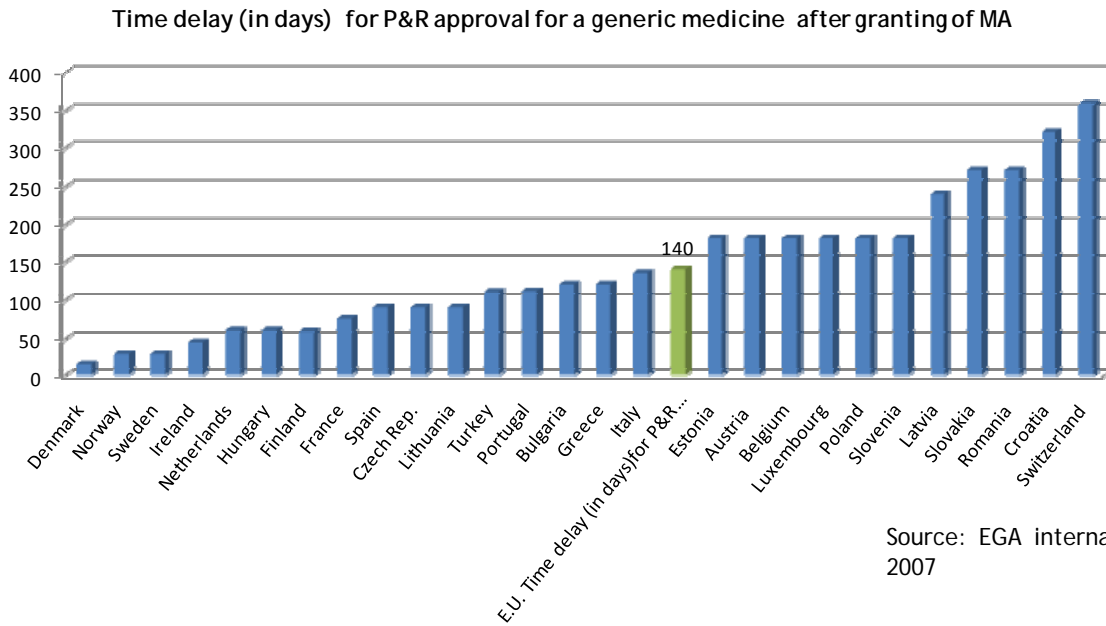
Chronological overview





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Attachment 6: timelines P&R in Member States

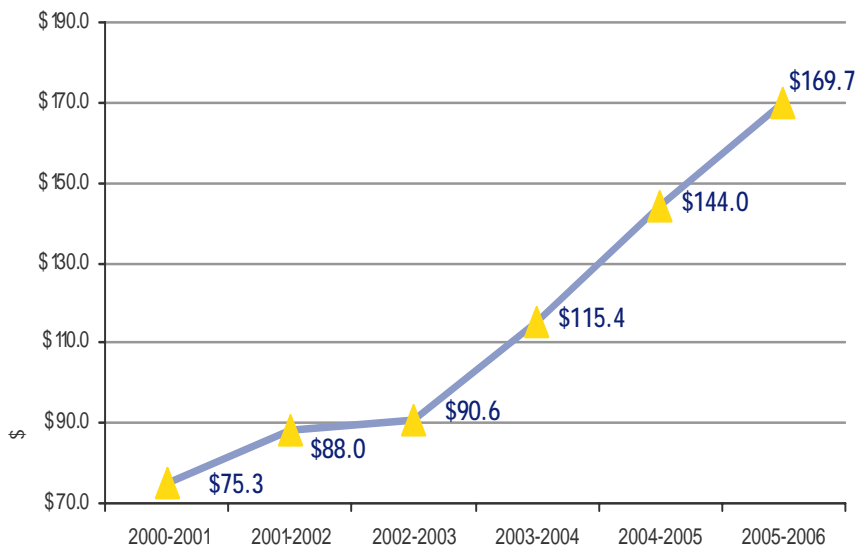




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Attachment 7: Pharmaceutical Sales are rising in Europe

Pharmaceutical Sales in Europe 2000-2005

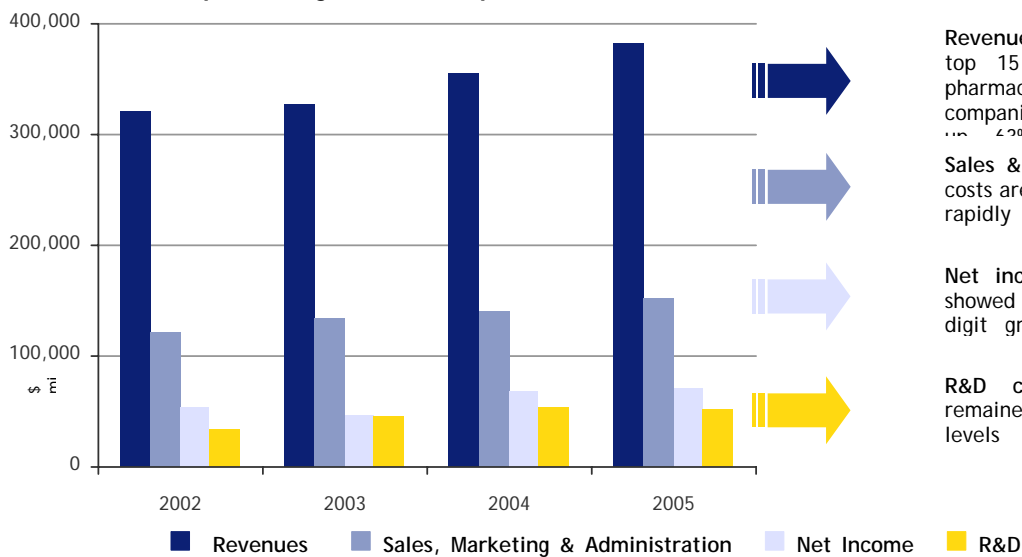


More than 125% growth in European pharmaceutical sales from 2000 to 2005.

IMS Health Global Pharmaceutical Report 2005

Pharmaceutical Sales easily cover R&D costs

Top 15 Originator Companies – 2002-2005



Revenues of the top 15 originator pharmaceutical companies made up 42% of the total sales in Europe.

Sales & marketing costs are increasing rapidly year after year.

Net income value showed double digit growth from 2002 to 2005.

R&D costs have remained at similar levels of investment over the period.

Source: Top 15 Originator Companies Annual Reports 2002 - 2005