

# VARIATIONS IN PRICES AND REIMBURSEMENT OF MEDICINES IN THE EUROPEAN UNION

Report

*A snapshot of data  
on amoxicillin,  
budesonide,  
losartan and  
salbutamol in eight  
European Union  
Member States*



## INTRODUCTION

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Universal healthcare, access to good quality care, solidarity and equity are all values to which European Union (EU) Member States have committed<sup>1</sup>. Medicines are often a key component of patients' treatment. Thus, equitable access to essential medicines is crucial to public health.

To contribute knowledge to the current situation of equity in access to medicines in the EU, Health Action International (HAI) Europe has undertaken a 'snapshot' of the retail selling price and affordability of a set of medicines in eight Member States<sup>1</sup>. The surveyed medicines consist of first-line treatments for common diseases, such as asthma, pneumonia and hypertension: budesonide dry powder in a dry powder inhaler, salbutamol pressurised suspension in a metered-dose inhaler, amoxicillin tablets/capsules and losartan tablets.

For each of the selected medicines, data has been retrieved for the originator brand and the lowest-priced generic<sup>2</sup> available at the consulted pharmacy.

Affordability is expressed as the percentage of a low-income family's monthly salary that must be allocated to pay for each medicine's standard treatment. The standard treatment cost is calculated on the basis of the patient price.<sup>3</sup> The study family is comprised of one working adult with pneumonia, one non-working adult with hypertension and a 12-year-old child with asthma. Where applicable, statutory minimum wages have been applied; otherwise, the income of the lowest-paid manual worker established as a result of a collective agreement.

Individuals from HAI Europe's network collected the data for the study at private local pharmacies. One pharmacy was consulted per country. Thus, the results provide a snapshot of the retail selling price and affordability of a set of medicines in a specific pharmacy, on a specific day, and cannot be considered as representative of the situation in a particular country. It does, however, demonstrate the reliability of the method, should a representative sample be employed.

The sample of selected countries—Czech Republic, Estonia, France, Germany, Greece, Latvia, Portugal and Sweden—includes a mixture of old and new Member States (year of EU entry prior, and in or after 2004), with different levels on gross domestic product (GDP) per capita, economic contexts (including countries receiving external financial aid) and out-of-pocket expenditure on pharmaceuticals at the time of data collection<sup>4</sup>.

The study results show significant variations of the retail selling price of medicines between different countries. The latter applies to both the price of originator brand medicines and generic medicines. There is evidence that in countries with a lower GDP per capita, certain medicines are almost equally priced, or even higher priced, than in countries with a relatively higher GDP per capita. This anomaly is even more acute when parity purchasing power is taken into account. It is particularly the case for some medicines in the Czech Republic, Estonia and Latvia. There is also evidence that generic medicines are not always available. Even when they are available, in some cases, the generic can be more expensive than the branded medicine.

Regarding affordability of treatment, although the percentages are not generally high, important differences can be observed. For example, in Latvia, a family has to pay 10 times more for the standard treatment with amoxicillin originator brand than families in France and Greece—and 20 times more for treatment with the losartan originator brand than a family in Germany. In general, in Latvia and Estonia, families must allocate higher percentages of their monthly income to pay for standard treatment medicines.

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<sup>1</sup> For more information on the methodology, see the methodology, available at <http://haieurope.org/wp-content/uploads/2014/06/Final-A2M-in-Europe-Methodology2.pdf>

<sup>2</sup> It was reported that, in France, generic versions of the same drug are priced equally.

<sup>3</sup> Patient price refers to the amount to be paid by the patient after applying the corresponding cost-sharing modalities (percentage co-payment, fixed co-payment, deductibles).

<sup>4</sup> See footnote 1

## PART I: Measuring variations in retail selling price

The retail selling price<sup>5</sup> refers to the price printed on the medicine package or displayed on the pharmacy's database before applying the corresponding cost-sharing modalities (i.e., percentage co-payment, fixed co-payment, deductibles<sup>6</sup>). Thus, the retail selling price has a direct impact on a medicine's overall affordability.

Survey results for each medicine found the following:

### A. BUDESONIDE

#### Key finding 1:

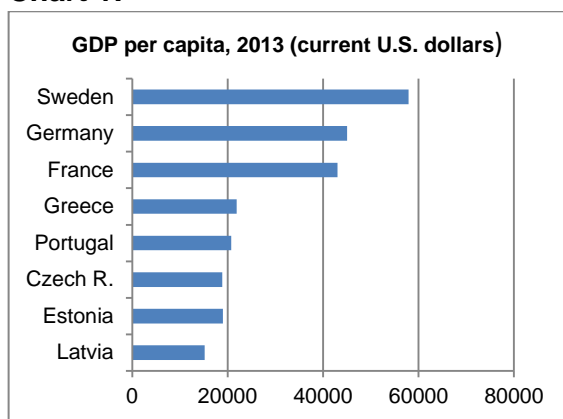
*In Latvia, where the GDP per capita is lowest among the country sample, prices are amongst the highest.*

The table below shows the unit retail selling price of the originator brand and lowest-priced generic of budesonide 200µg dry powder. The unit price refers to the price of one dose.

Table 1:

Unit retail selling price of budesonide at market exchange rate (U.S. dollar) <sup>7</sup>		
	Originator brand	Lowest-priced generic
Czech R.	0,2093	0,1482
Estonia	<b>0,2337</b>	0,1403
France	0,2120	-
Germany	<b>0,2765</b>	<b>0,2225</b>
Greece	0,1463	-
Latvia	<b>0,3015</b>	<b>0,1510</b>
Portugal	0,2100	0,1050
Sweden	<b>0,3068</b>	<b>0,1976</b>

Chart 1:



The results show that the price for the originator brand in Latvia is almost as high as in Sweden, despite the fact that Latvia has the lowest GDP<sup>8</sup> per capita at nominal value amongst the sample, representing 26 per cent of the GDP in Sweden.

With respect to the lowest-priced generic, the highest price is found in Germany. Sweden and Latvia show the steepest variation between the price of the originator brand and that of the lowest-priced generic, contrary to the situation in Germany, where the variation of prices is the lowest.

<sup>5</sup> The data in Greece was collected before the Greek legal amendment of November 2013 on drug pricing came into force, and in Latvia before the country joined the euro area.

<sup>6</sup> Percentage co-payment: The patient pays a defined share of the cost of a service or product, with the third party payer paying the remainder; Fixed co-payment: An out-of-pocket payment in the form of a fixed amount (like for example a prescription fee) to be paid for a service, a medicine or a medical device; Deductible: Initial expense up to a fixed amount which must be paid out-of-pocket for a service or over a defined period of time by an insured person; then all or a percentage of the rest of the cost is covered by a third party payer. WHO Collaborating Centre for Pharmaceutical Pricing and Reimbursement Policies, Glossary.

<sup>7</sup> The exchange rate corresponds to the average weekly exchange rate from the period of data collection 29/09/13-15/12/13- OANDA, currency converter <http://www.oanda.com/currency/converter>

<sup>8</sup> International Monetary Fund, World Economic Outlook Database, April 2014

<http://www.imf.org/external/pubs/ft/weo/2014/01/weodata/weorept.aspx?sy=2013&ey=2013&scsm=1&ssd=1&sort=country&ds=.&br=1&c=182%2C935%2C939%2C132%2C134%2C174%2C144%2C941&s=NGDPDPC&grp=0&a=&pr.x=9&pr.y=6>

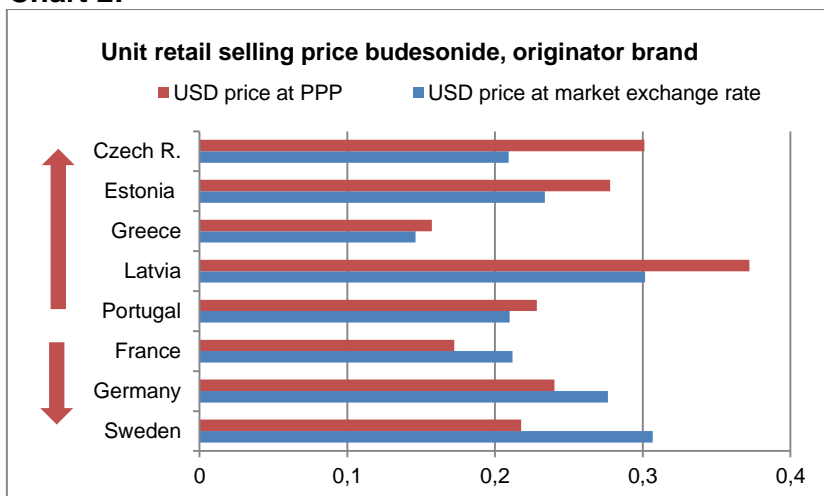
**Key finding 2:**

**Medicines prices increase at purchasing parity power in Eastern and Southern Europe.**

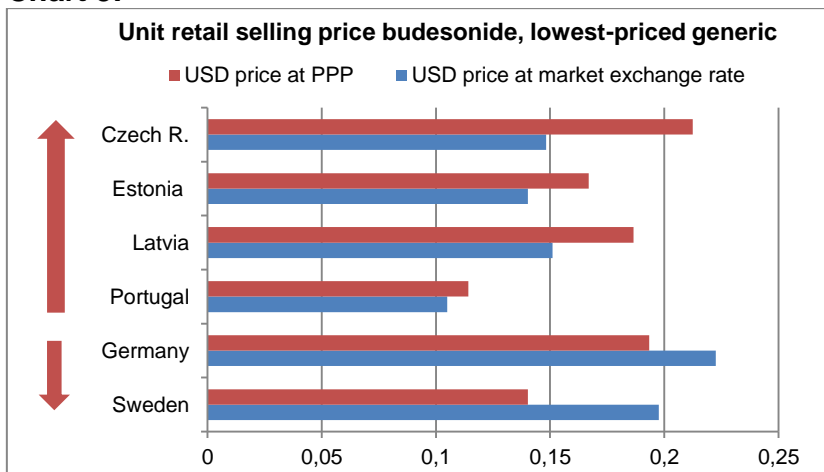
Theoretically, currencies should trade at the rate that would make the price of goods the same in each country. Purchasing power parity (PPP) is a good indicator of the relative price of goods. In fact, where the price in terms of PPP is greater than the price at market exchange rate, the goods can be considered as high-priced, in relative terms, in that country. Likewise, when the price in terms of PPP is less than the price at market exchange rate, the goods can be considered to be low-priced in relative terms.

The comparison between data at market exchange rate with the data at purchasing power parity illustrates that in France, Germany and Sweden, prices are lower at PPP<sup>9</sup>. In contrast, in the Czech Republic, Estonia, Greece, Latvia and Portugal, prices increase at PPP.

**Chart 2:**



**Chart 3:**



<sup>9</sup> Implied PPP conversion rate 2013 retrieved from the International Monetary Fund, World Economic Outlook Database, April 2014 <http://www.imf.org/external/pubs/ft/weo/2014/01/weodata/weorept.aspx?sy=2013&ey=2013&scsm=1&ssd=1&sort=country&ds=.&br=1&c=182%2C935%2C939%2C132%2C134%2C174%2C144%2C941&s=PPPEX&grp=0&a=&pr.x=18&pr.y=10>

**Key conclusions for budesonide:**

- Latvia, with the lowest GDP per capita, presents high prices at market exchange rate, both for the originator brand and the lowest-priced generic.
- Latvian prices are even higher at PPP, particularly for the originator brand.
- While the Czech Republic has the seventh-highest price for the originator brand at the market exchange rate, it has the second-highest price in relative terms, followed by Estonia.
- In Sweden, where the price for the originator brand is the highest at the market exchange rate, it is one of the lowest prices, relatively speaking.
- Regarding generic medicines, the Czech Republic has the highest price in relative terms, despite the fact that at the market exchange rate, it is the fourth on the list. The price of the generic in Sweden is almost the lowest when PPP is considered.

**B. SALBUTAMOL**

**Key finding 1:**

**Germany’s retail selling prices for originator brand and lowest-priced generic are highest.**

The table below shows the unit price of the originator brand and lowest-priced generic of salbutamol 100µg pressurised suspension. The unit price refers to the price of one dose.

**Table 2:**

Unit retail selling price of salbutamol at market exchange rate (U.S. dollar)		
	Originator brand	Lowest-priced generic
Czech R.	0,0181	<b>0,0203</b>
Estonia	<b>0,0436</b>	-
France	<b>0,0343</b>	-
Germany	<b>0,1056</b>	<b>0,1037</b>
Greece	0,0174	0,0139
Latvia	0,0231	<b>0,0218</b>
Portugal	0,0247	0,0164
Sweden	<b>0,0473</b>	<b>0,0561</b>

**Chart 4:**

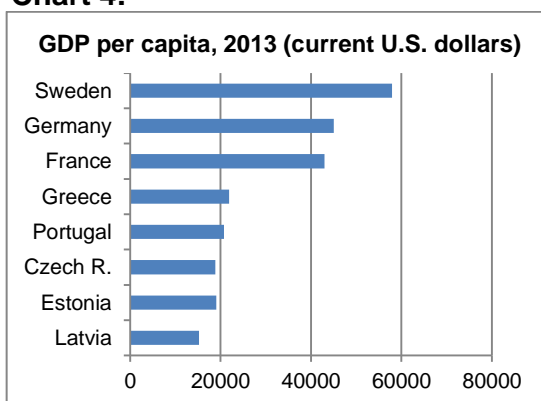


Table 2 shows that Germany presents the highest price for salbutamol originator brand at the market exchange rate, exceeding, to a great extent, the prices of the other countries. The second-highest price for the originator brand corresponds to Sweden, followed closely by that in Estonia, despite the fact that Estonia represents 32 per cent of the Swedish GDP per capita.

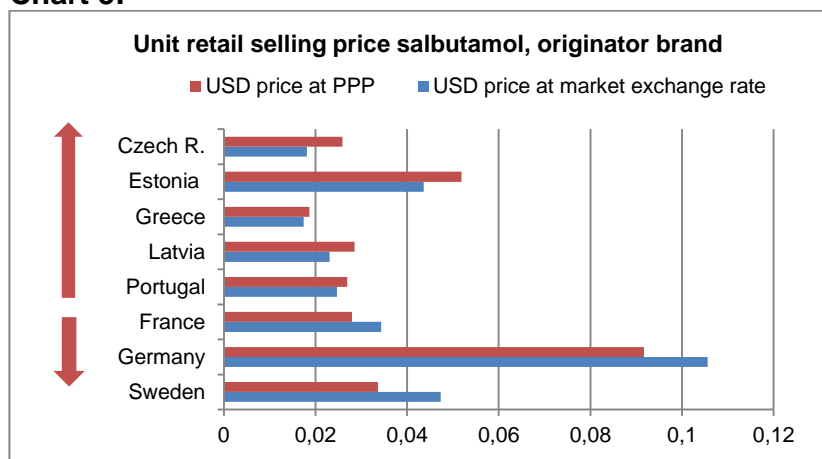
Germany also presents the highest price for the generic medicine, almost doubling that in Sweden, despite having a lower GDP per capita. In Sweden, in fact, the price of the generic surpasses the price of the originator brand. The same situation applies to the Czech Republic.

**Key finding 2:**

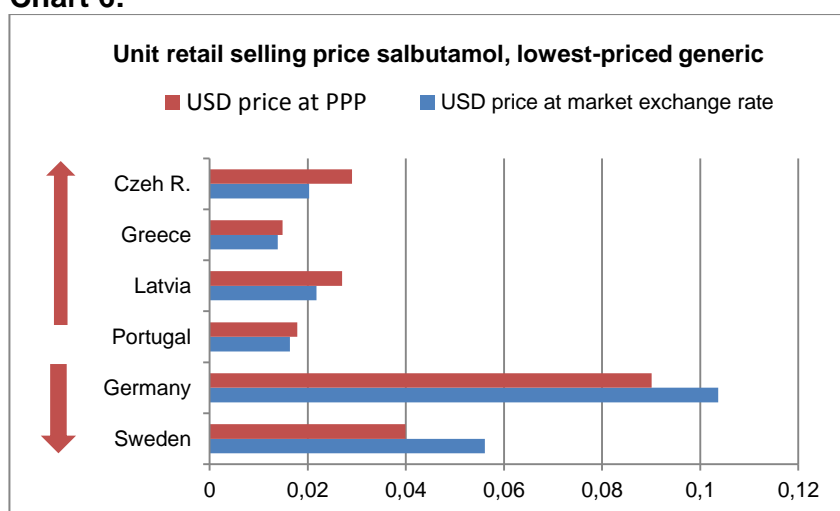
**Medicines prices are higher in relative terms in countries with a lower GDP per capita.**

The comparison between the prices of salbutamol at market exchange rate with the price at PPP shows the same results as those registered for budesonide. Indeed, in the Czech Republic, Estonia, Greece, Latvia and Portugal, medicine prices increase at PPP. This contrasts with the situation in France, Germany and Sweden.

**Chart 5:**



**Chart 6:**



**Key conclusions for salbutamol:**

- Despite the price of the originator brand in Germany decreases when PPP is taken into account, it is still the highest in relative terms.
- Estonia, which presents the third highest price for originator brand at market exchange rate after Sweden, surpasses Sweden when PPP is taken into account, representing the second highest price.
- The price of the originator brand in Latvia, is, in fact, higher than that of France in relative terms, reversing the situation given at market exchange rate.
- Regarding the generic medicines, Germany presents the highest price at PPP, although this price is lower than that at market exchange rate.

**C. AMOXICILLIN**

**Key finding 1:**

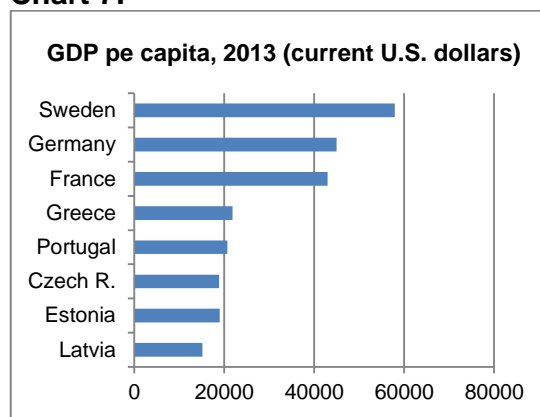
**Lowest-priced generic in Germany is significantly more expensive.**

The following table shows the unit price of amoxicillin 500mg tablets/capsules. The unit price refers to the price of one tablet/capsule.

**Table 3:**

Unit retail selling price of amoxicillin at market exchange rate (US dollar)		
	Originator brand	Lowest-priced generic
Czech R.	-	0,152
Estonia	-	<b>0,2581</b>
France	0,255	0,255
Germany	-	<b>2,0667</b>
Greece	0,2367	<b>0,2774</b>
Latvia	<b>0,2847</b>	0,1818
Portugal	<b>0,4245</b>	0,175
Sweden	-	<b>0,30</b>

**Chart 7:**



The price for amoxicillin originator brand in Portugal stands out. The price in Latvia is higher than that of France, despite representing 35 per cent of the French GDP per capita.

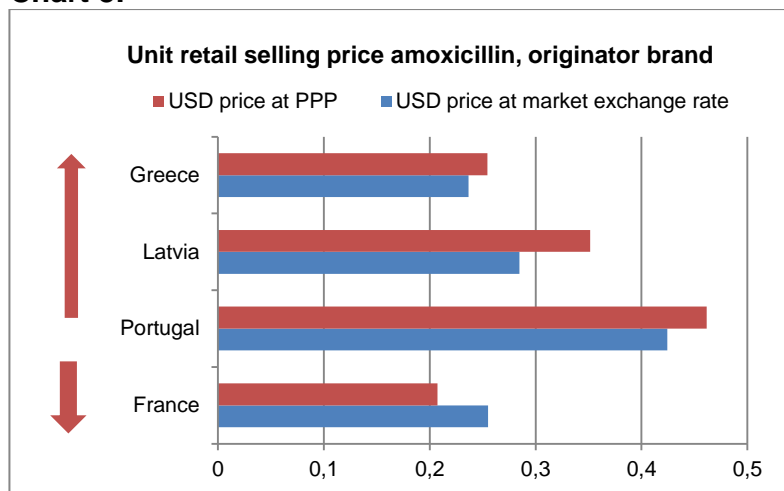
Regarding the lowest-priced generic, Germany presents a markedly high price compared to the rest of the countries. In Greece, the lowest-priced generic is more expensive than the originator brand, whilst in France, there are no price differences between the price of the originator brand and the generic.

**Key finding 2:**

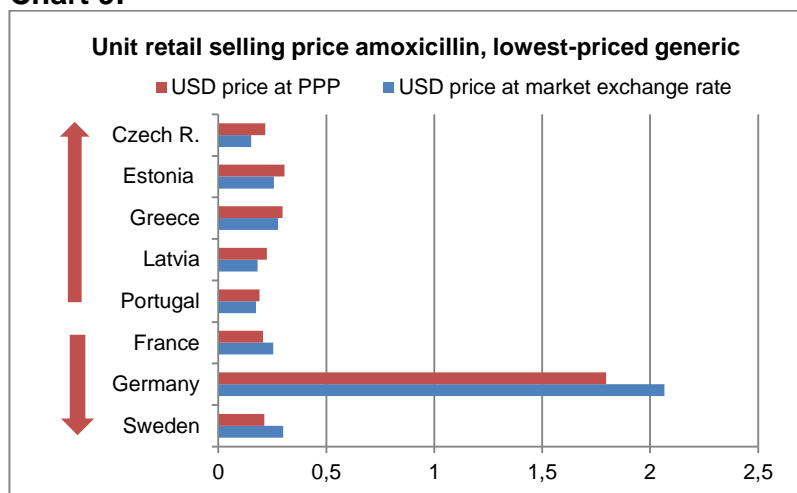
***Following the trend, medicines prices increase in Eastern and Southern Europe when PPP is taken into account.***

This situation contrasts with that in France, Germany and Sweden, where medicines prices decrease at PPP.

**Chart 8:**



**Chart 9:**



**Key conclusions for amoxicillin:**

- In relative terms, Greece has a higher price for the originator brand than France, which has, in fact, the lowest when PPP is taken into account.
- Regarding generic medicines, Germany has the highest price in relative terms, although it is lower compared to the price at the market exchange rate.
- Whilst Sweden has the second-highest price for the generic after Germany at the market exchange rate, the country drops to sixth position when prices in PPP are taken into account.
- In relative terms, the price of the generic in Greece, Estonia, Latvia and the Czech Republic are higher than in Sweden.
- Moreover, the price of the generic in Latvia and the Czech Republic surpass that of France when PPP is taken into account, contrary to the situation at market exchange rate.

**D. LOSARTAN**

**Key finding 1:**

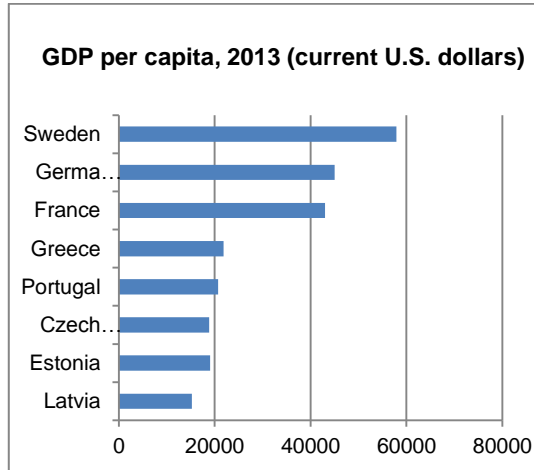
*Lowest-priced generic in Greece almost as expensive as in France despite remarkable difference in GDP per capita.*

The following table shows the unit price of losartan 50mg tablets. The unit price refers to the price of one tablet.

**Table 4:**

Unit retail selling price of losartan at market exchange rate (U.S. dollar)		
	Originator brand	Lowest-priced generic
Czech R.	0,2023	0,1850
Estonia	-	0,1872
France	0,6981	<b>0,4180</b>
Germany	<b>1,2551</b>	<b>0,3332</b>
Greece	0,4906	<b>0,4143</b>
Latvia	<b>0,7570</b>	<b>0,2033</b>
Portugal	0,2785	0,1142
Sweden	<b>0,9336</b>	0,1523

**Chart 10:**





The above data shows that Germany presents the highest price for the originator brand, followed by Sweden and Latvia.

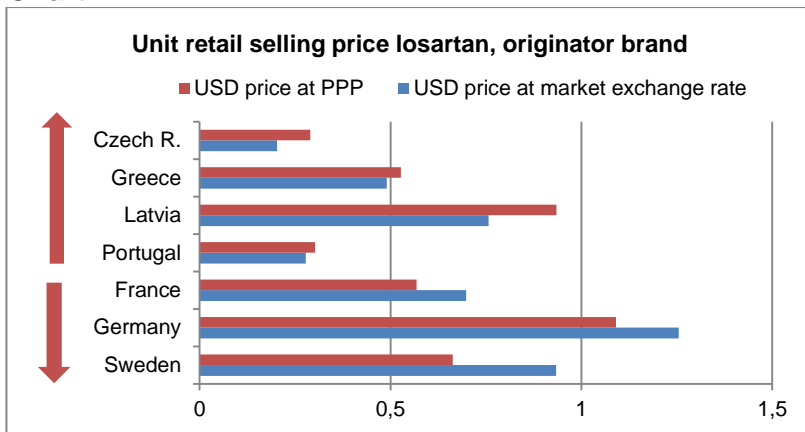
In regard to the lowest-priced generic, the price in France almost equals the price of Greece, despite the fact that Greece has only 50 per cent of the French GDP per capita. The price in Greece more than triples that of Portugal regardless of close levels of GDP per capita.

**Key finding 2:**

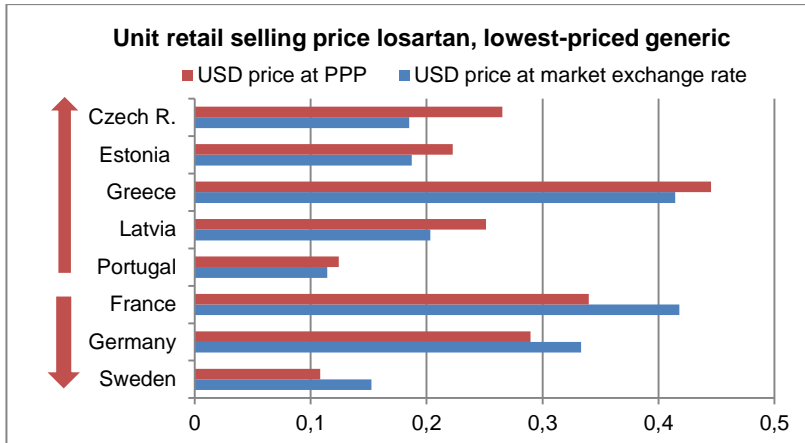
**Purchasing power: Medicines prices are relatively higher in countries with lower GDP per capita.**

This contrasts with the situation in France, Germany and Sweden (which have higher prices at market exchange rate).

**Chart 11:**



**Chart 12:**



**Key conclusions for losartan:**

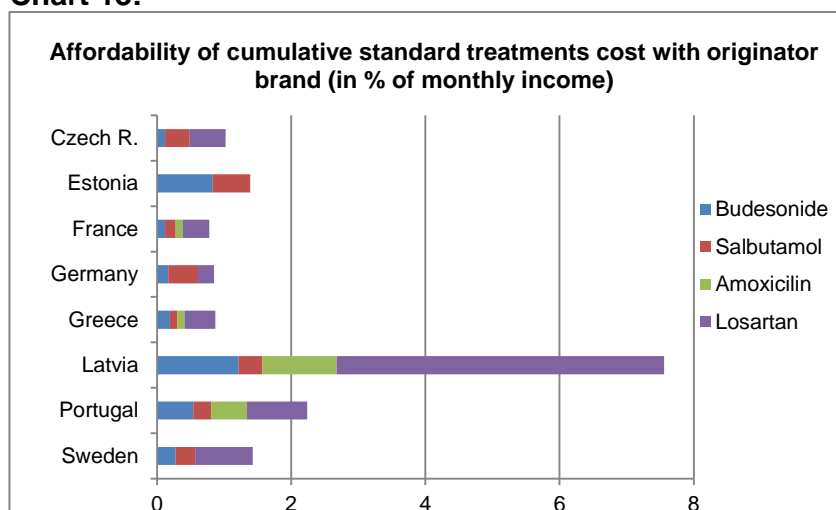
- Contrary to data at market exchange rate, relative prices show that the price of the losartan originator brand in Latvia is higher than that of Sweden.
- Regarding the generic, Greece presents the highest price in relative terms, surpassing that of France.
- When PPP is taken into account, Sweden, in fact, presents the lowest price.
- Whilst the Czech Republic ranks sixth on the list of generic prices at the market exchange rate, it ranks fourth when relative prices are taken into account.

## PART II: Measuring variations on affordability

Affordability is expressed as the percentage of the family's monthly income<sup>10</sup> that must be allocated to pay for each medicine's standard treatment. The standard treatment cost was computed using the patient unit price<sup>11</sup> and according to the standard treatment scheme.<sup>12</sup>

The charts below illustrate the affordability of the cumulative standard treatment cost for originator brand medicines and lowest-priced generic in each country. Missing data indicates that the medicine was reported as not available by the consulted pharmacy, unless specified otherwise (i.e., it is fully reimbursed).

Chart 13:

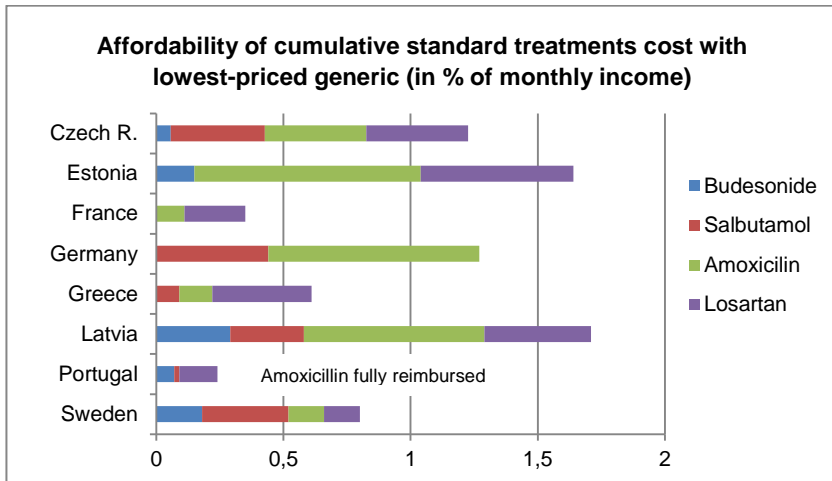


<sup>10</sup> The study family is composed of one working adult, one non-working adult and a 12-year-old child. The family's monthly income corresponds to the statutory monthly gross minimum wage in force at the second semester of 2013. Germany and Sweden don't have a statutory minimum wage. However, in Germany, there are binding minimum wages for individual economic branches and occupations; therefore, the monthly wage used to compute affordability corresponds to the lowest wage paid to manual workers – could be merely indicative. In Sweden, minimum wages are agreed through collective agreements; therefore, the monthly minimum wage used to compute affordability – corresponding to the lowest wage paid to manual workers – could be merely indicative. For more information on the methodology see Annex I, available at <http://haieurope.org/wp-content/uploads/2014/06/Final-A2M-in-Europe-Methodology.pdf>.

<sup>11</sup> The patient price refers to the amount to be paid by the patient after applying the corresponding cost-sharing modalities (percentage co-payment, fixed co-payment and deductibles). In Sweden, there is a system of deductibles according to which the accumulated medicines' expense between 0 and 1 100SEK within a 12-month period is fully incurred by the patient. For the purpose of this study, the family's accumulated annual medicines expense was considered to be of 0 SEK. Consequently, in Sweden, the patient price corresponds to the retail selling price. In those countries where there is a multi-payer health insurance system, the healthcare services covered by the basic package were taken into account.

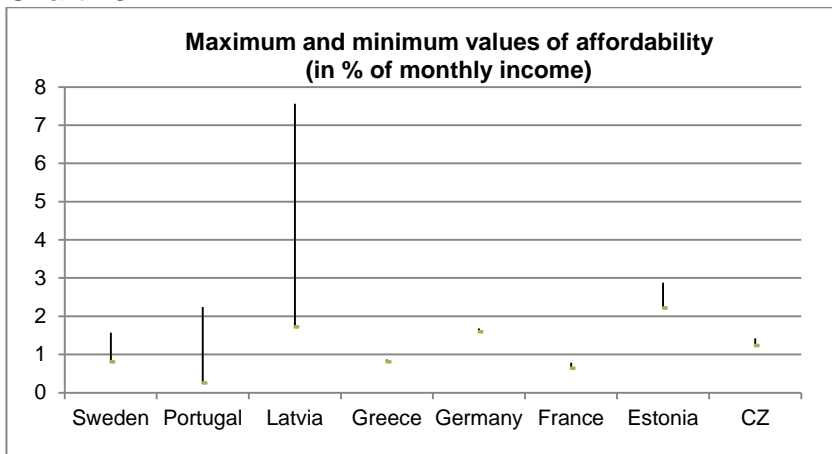
<sup>12</sup> The standard treatment schemes are the following: budesonide – 1 dose/day/month; amoxicillin – 1 tab(cap)/3xday/5days; losartan – 1 tab/day/month. For salbutamol, due to the difficulty in establishing a common standard treatment, the use of one canister per month was considered to calculate the cost of the standard treatment.

**Chart 14:**



Due to the fact that all medicines are not always available, an affordability comparison of the cumulative standard treatment cost is rather limited; however, by combining the affordability of treatment with originator brand and generic medicines, whenever branded medicines are not available, maximum values of affordability per country can be set. Likewise, the combination of treatment affordability with generics and originator brand medicines, whenever a generic version is not available, allows the opportunity to obtain data about the minimum values for affordability per country.

**Chart 15:**



As chart 15 shows, significant differences can be observed in regard to the range of minimum and maximum values. Latvia presents, by far, the highest maximum value, which can be partly explained due to high unaffordability of losartan with originator brand compared to other countries. Latvia also has, in comparative terms, a high minimum value, which is only surpassed by that of Estonia.

Latvia is the country with the highest difference between maximum and minimum values, followed by Portugal. In fact, Portugal has the lowest minimum value, which can be partly explained by the fact that the amoxicillin generic is fully reimbursed. Greece presents the lowest difference between maximum and minimum values.

Survey results on affordability for each medicine found:

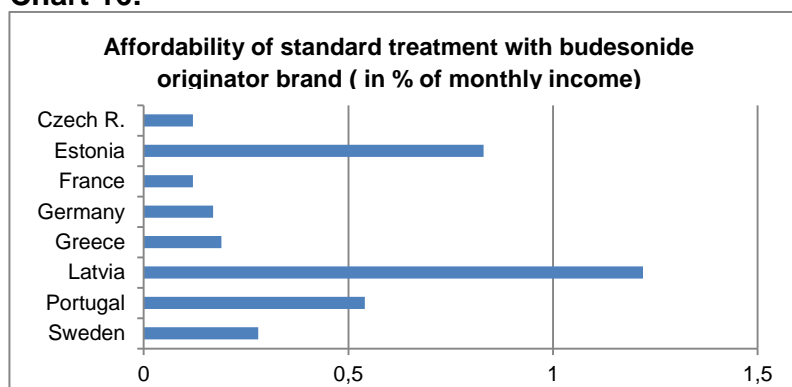
## A. BUDESONIDE

### **Key finding 1:**

***In Latvia, treatment is the least affordable with both, originator brand and lowest-priced generic.***

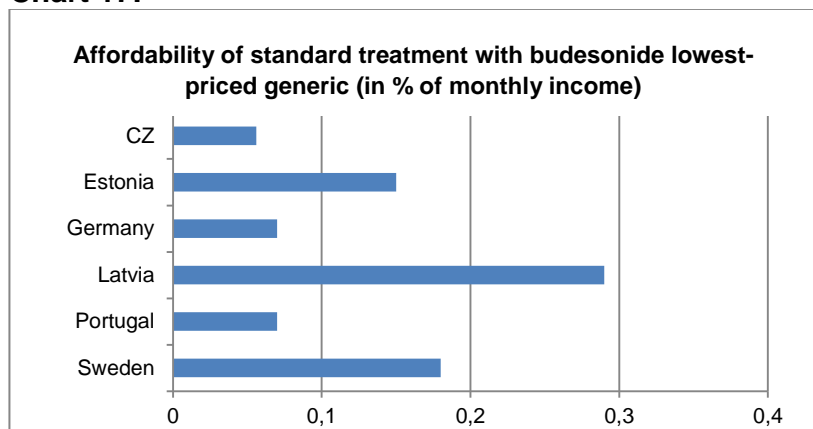
According to the results presented in the chart below, in Latvia, the percentage of a family's monthly income allocated to pay for the standard treatment of asthma with the originator brand is ten times higher than the amount that families in the Czech Republic and France must pay.

**Chart 16:**



Regarding treatment with the lowest-priced generic (chart 17), a family in Latvia allocates the highest percentage of its monthly income to purchase the standard treatment, when compared to families in the remainder of countries.

**Chart 17:**



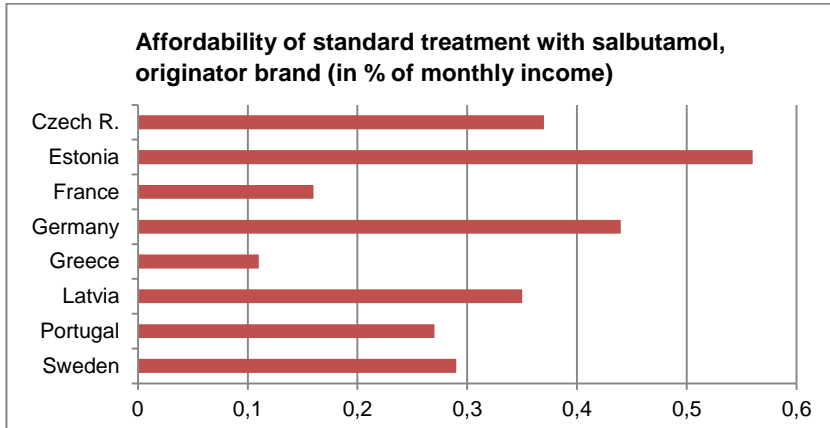
## B. SALBUTAMOL

### **Key finding 1:**

**Standard treatment with originator brand in Estonia is significantly more unaffordable.**

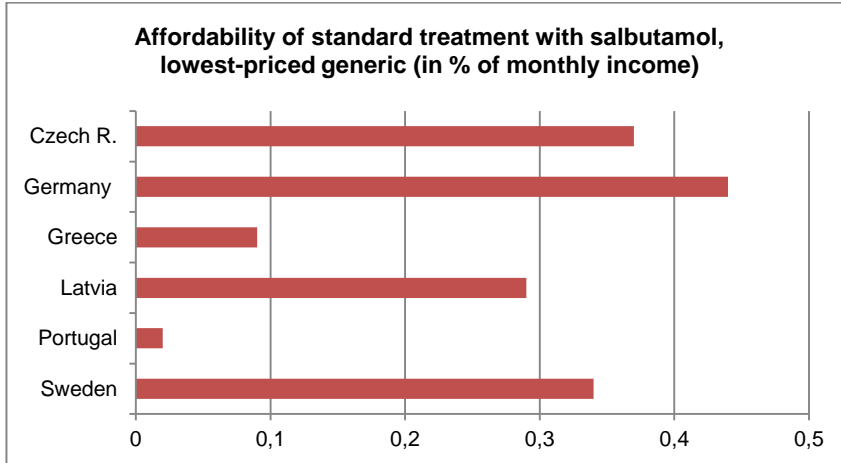
After Estonia, other countries where treatment with the originator brand is less affordable include Germany, the Czech Republic and Latvia.

**Chart 18:**



Germany is the country where treatment with the lowest-priced generic is the least affordable, followed by the Czech Republic. In Sweden, the treatment is more unaffordable with the lowest-priced generic than with the originator brand, whilst Germany presents no variation between affordability of treatment with the originator brand and generic.

**Chart 19:**



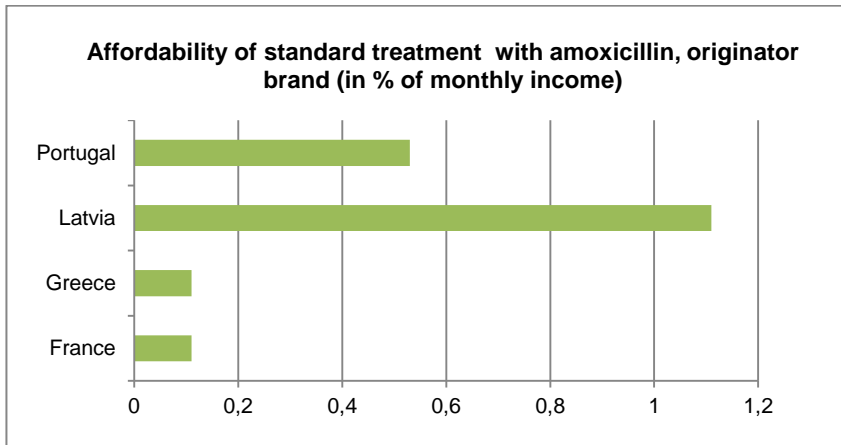
## C. AMOXICILLIN

### **Key finding1:**

**Treatment in Latvia with originator brand is remarkably more unaffordable than in France and Greece.**

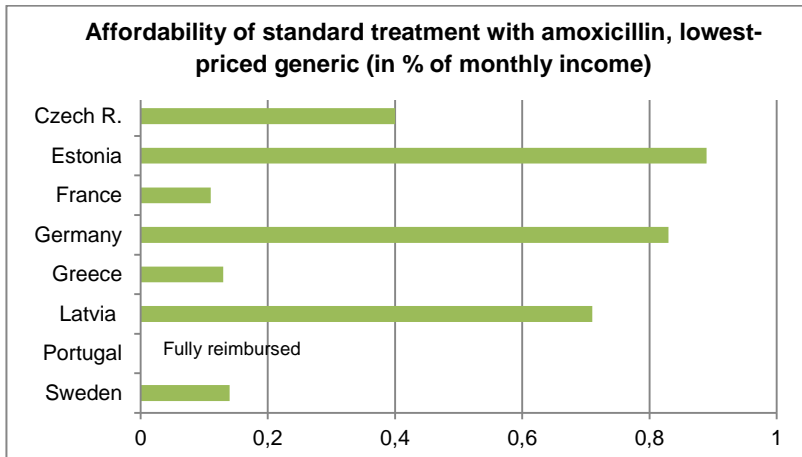
In Latvia, a family must pay 10 times more for the standard treatment with the originator brand than families in France and Greece.

**Chart 20:**



In Portugal, the treatment with lowest-priced generic is fully reimbursed. The country with the least affordable treatment with generic is Estonia, followed by Germany and Latvia. In France, there is no variation between the affordability of the treatment with the originator brand and the generic.

**Chart 21:**



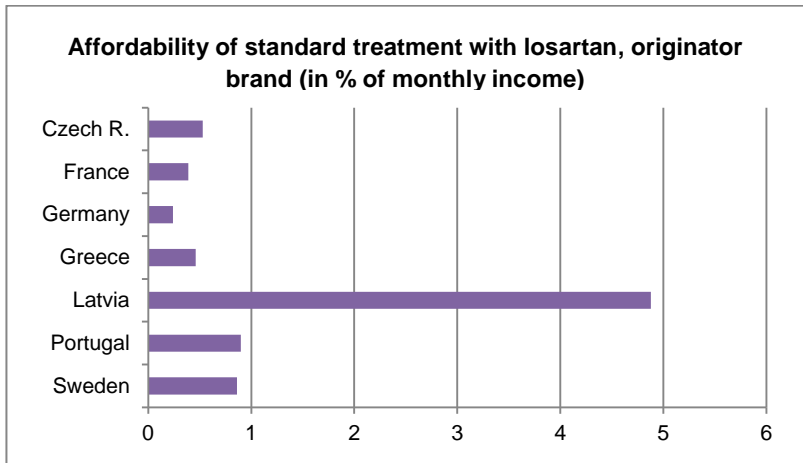
## D. LOSARTAN

### Key finding 1:

***In Latvia, treatment with the originator brand is highly unaffordable compared to the rest of the countries.***

The chart below illustrates that in Latvia, a family has to pay 20 times more for the standard treatment with the originator brand than a family in Germany.

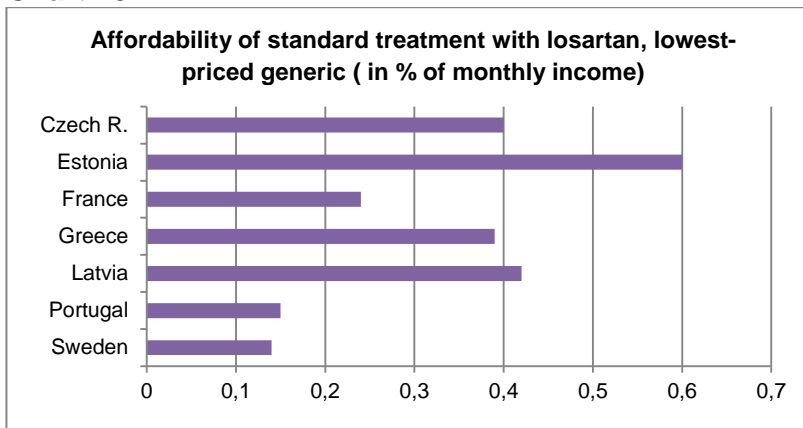
**Chart 22:**



In Estonia, the amount that a family must pay for standard treatment with the lowest-priced generic is significantly higher when compared to the rest of the countries.

There is a sharp contrast between affordability of treatment in Latvia with the originator brand and the generic.

**Chart 23:**



## CONCLUSIONS

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This study has included off-patent medicines, which are first-line treatments for common diseases. While the obtained data on retail prices and affordability may not be high in absolute terms, this study provides the following key findings:

- Significant variations of the retail selling price of medicines are observed between countries, both for originator brand medicines and generics.
- There is evidence that in countries with lower GDP per capita, certain medicines are, at market exchange rate, equally priced or even more highly-priced than those in countries with higher GDP per capita. This situation is even more acute when relative prices (PPP) are taken into account. This is particularly the case for certain medicines in the Czech Republic, Estonia and Latvia.
- Generics are not always available. Even when available, the lowest-priced generic does not necessarily have a much lower price than the originator brand medicine. In fact, in some cases, the lowest-priced generic is even more expensive than the branded medicine.
- Significant differences can be observed regarding affordability of treatment. For example, in Latvia, a family has to pay 10 times more for the standard treatment with amoxicillin originator brand than families in France and Greece, and 20 times more for treatment with the losartan originator brand than a family in Germany.
- Generally, in Latvia and Estonia, families must allocate a higher percentage of their monthly salary to pay for standard treatment medicines.
- Affordability of treatment with the lowest-priced generic is not always much lower. In some cases, it is even more expensive than affordability of treatment with the originator brand.

## RECOMMENDATIONS

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Although this a snapshot study for a certain set of medicines performed in a limited number of pharmacies and EU Member States, the following recommendations can be made:

- Transparency of medicine prices and reimbursement schemes must be transparent. Mechanisms for public access to, and exchange of information, at the national and EU levels should be developed and implemented.
- Barriers to generic competition for lower prices of medicines for greater affordability in access to medicines should be reduced.
- Generic prescribing to lower medicines expenditure should be mandated and/or promoted.
- Publicly funded research to further evaluate the current situation of equitable access to needed medicines in the EU should be promoted. Persisting inequalities might be exacerbating due to austerity measures taken in response to the economic crisis and, in particular, due to the implementation of pharmaceutical policies aimed at shifting the cost of burden to patients. Given the fact that this small study already demonstrates inequalities amongst countries in retail price and affordability for low-cost first-line treatments, it is all the more important that the current situation of access to medicines is further assessed, particularly for the more expensive and required treatments.

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**This report has been developed by HAI Europe in collaboration with Eleonora Morais, PharmD, MSc.**

**A special thanks to all the data collectors who, voluntarily, contributed to this project.**

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