Cost savings of switching private sector consumption from originator brand medicines to generic equivalents

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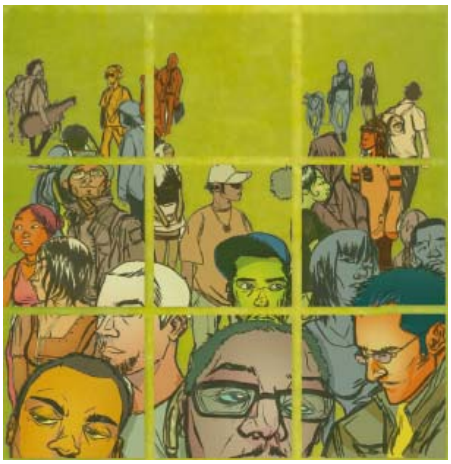

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Introduction

In low- and middle-income countries, originator brand medicines generally cost substantially more than their generic equivalents. Patients purchasing medicines in the private sector pay, on average, 2.6 times more for originator brand than for their lowest-priced generic equivalent (1). In some low- and middle income countries, this price differential is more than 10-fold.

When generic medicines are of assured quality and are offered at lower prices than the corresponding originator brand product, there is a potential for patients and health systems to achieve equivalent health outcomes at a lower cost. The use of generics is therefore often promoted in the public and private sectors to reduce medicine costs, and increase product availability and consumer access (2). However, evidence shows that the uptake of generic medicines is sub-optimal. For example, even in Brazil where there are many manufacturers of generic medicines, these medicines represent only 14% of medicine revenues and 16% of total sales (3). In pharmaceutical markets where patent protection does not exist, barriers to the use of generic medicines include a lack of incentives for physicians to prescribe generics, economic disincentives for pharmacists to dispense generics, and a lack of confidence in the quality of generic medicines on the part of patients and health professionals (4).

While recognizing that these and other barriers exist to the optimal use of generic medicines, an analysis was conducted to estimate the cost savings that could be achieved if, for selected multisource products, consumption of originator brands could be shifted to their generic equivalents. The potential savings that could be obtained by switching purchases from originator brand medicines to the lowest-priced generic equivalents was therefore estimated for a selection of medicines in the private sectors of low- and middle-income countries. While the term generic medicine can be interpreted in different ways, for the purposes of this analysis it is defined as a pharmaceutical product intended to be interchangeable with the originator brand product, manufactured without a licence from the originator manufacturer and marketed after the expiry of patent or other exclusivity rights (5).

Methods

The analysis uses medicine price data collected in facility-based surveys conducted using a standard methodology developed by WHO and Health Action International (5), together with medicine consumption data collected by IMS Health, a pharmaceutical market intelligence company (www.imshealth.com/).

As a first step, the 40 countries for which WHO/HAI pricing data were available was compared with countries for which IMS Health consumption data were also available. A set of 17 countries was identified for which both data sets would be available to enable the analysis (Table 1). Next, the medicines included in the price and availability surveys in these 17 countries was compared to identify the 15 most commonly surveyed medicines for inclusion in the analysis. This method, which has been previously applied (1), was used in order to increase the comparability of study medicines across the countries. In addition to the 15 most frequently surveyed medicines, 3 statins were also included in the analysis given the high price differential between originator brands and generics for these medicines and the large volumes consumed. The 18 medicines included in the analysis are shown in Table 2.

The volume of originator brand medicines supplied through the retail sector in each country in 2009 was obtained from IMS Health. Exceptions are China, where data were available from public hospitals only, and Malaysia, where data were only available for the combined private hospital and retail sectors. The median unit prices of each medicine, for both originator brand and lowest-priced generic products, was obtained from surveys of medicine prices and availability conducted using the standard WHO/HAI methodology (5).

For each medicine, the volume of consumption of the originator brand product provided through the retail sector in 2009 was obtained in IMS Standard Units. This volume was then applied to the median unit prices for both originator brands and their lowest-priced generics to estimate the cost savings that could be generated if the originator brand products consumed were purchased as lowest-priced generics. As price data was collected in different years, prices were adjusted to 2008 using Consumer Price Index (CPI) data for each individual country. The year 2008 was used as it was the most recent year for which Consumer Price Index (CPI) data was available at the time of analysis. Prices have not been corrected for differences in purchasing power across

countries but rather reflect the actual costs that each country could save, converted into USD using the exchange rate at the time that medicine price data was collected.

Results

The results of the analysis are shown in Table 3 for the limited basket of medicines studied in each country. Across the countries studied, an average of 9%to 89% could be saved by individual medicine from a switch in private sector purchases from originator brands to lowest-priced generic equivalents. In Pakistan, where an average of 51% of current private sector spending could be saved across the 9 medicines studied, the net savings would exceed US 12 million (2008 dollars). In public hospitals in China, over US 86 million (2008 dollars) could be saved from switching only 4 medicines, saving patients an average of 65%. The low average percentage savings in Kuwait (9%) is notable. Results of the WHO/HAI survey of medicine prices and availability conducted in Kuwait in 2004 show that the low price differential between originator brands and their generic equivalents observed in this country is the result of high-priced generics and not low-priced originator brands. Across the 29 medicines surveyed in Kuwait, generics and originator brands were priced at 15.7 and 17.5 times international reference prices, respectively.

Discussion

The above analysis shows that cost savings of more than 50% could be generated in all but two of the countries studied if consumption of the studied medicines shifted from the originator brand product to the lowest-priced generic equivalent available at medicine outlets in the private sector. The results are a broad indication of the efficiencies that could be gained through increased uptake of generic medicines.

The results of this study are illustrative only and are subject to certain limitations. Firstly, the choice of countries included in the analysis is dependant upon the availability of both price data from WHO/HAI surveys and volume data from IMS Health. They have not been selected according to level of generic penetration or other characteristics. Second, the results of this analysis are largely dependent on the selection of medicines used in the analysis. They have been selected based on their frequency of inclusion in WHO/HAI surveys in order to increase comparability across countries. However, these medicines may not reflect the products with the highest national consumption overall, or those with the largest consumption of brands in relation

to generics. In fact, given that the study medicines have been off-patent for some time and that for each, multiple generic equivalents exist on the international market, these medicines are likely to generate an underestimate of the potential cost savings associated with a switch in consumption from originator brands to generics. Third, for each medicine included in the analysis, price data is needed on both the originator brand and lowest-priced generic product to enable measurement of cost savings. In no country studied were price data available for both product types for all 18 target medicines; in China, Tunisia and Ukraine fewer than five medicines had sufficient price data to enable the cost savings estimate.

Despite these limitations, this study raises important concerns about the use of originator brand products when lower-cost generics exist. Investments in the promotion of quality assured generic medicines are therefore warranted. Policies to promote generic uptake include:

- Assurance of effective quality assurance capability and promotion of generic substitution at all levels of the health system
- Promotion of generic acceptance by professionals, patients and the general community
- Prequalification of generic manufacturers and publication of the quality assurance documentation of such manufacturers
- Fast-tracking of regulatory approval of generic medicines (5)

It should be emphasized that a total shift in consumption from originator brand products to their generic equivalents does not reflect a feasible scenario under real-world conditions. As previously mentioned, many barriers exist to generic uptake. However, countries such as the United States, Denmark Czech Republic, Turkey and Poland have achieved generic medicine consumption of over 50% of the total pharmaceutical market by volume (6). Opportunities therefore exist for low- and middle-income countries to improve generic uptake and by consequence, improve the affordability of treatment for their populations.

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Table 1. Countries included in the secondary analysis (both IMS-Health medicine volume data and WHO/HAI medicine price data were available)

Country (medicine prices survey year)	WHO Region	World Bank Income Group (1 July 2009)
China* (2004)	Western Pacific	lower-middle
Colombia (2008)	Americas	upper-middle
Ecuador (2008)	Americas	lower-middle
Indonesia (2004)	South-East Asia	lower-middle
Jordan (2004)	Eastern Mediterranean	lower-middle
Kuwait (2004)	Eastern Mediterranean	high
Lebanon (2004)	Eastern Mediterranean	upper-middle
Malaysia (2004)	Western Pacific	upper-middle
Morocco (2004)	Eastern Mediterranean	lower-middle
Pakistan (2004)	Eastern Mediterranean	lower-middle
Peru (2005)	Americas	upper-middle
Philippines (2005)	Western Pacific	lower-middle
South Africa† (2004)	Africa	upper-middle
Thailand (2006)	South-East Asia	lower-middle
Tunisia (2004)	Eastern Mediterranean	lower-middle
Ukraine (2007)	European	lower-middle
United Arab Emirates (2006)	Eastern Mediterranean	high

* Medicine price data based on two sub-national surveys conducted in Shandong Province & Shanghai
† Medicine price data based on a sub-national survey conducted in Gauteng Province

Table 2. Medicines included in the secondary analysis

Medicine	Medicine category	% of WHO/HAI surveys that included medicine
Salbutamol 100mcg/dose inhaler	Antiasthmatic	100%
Captoril 25mg cap/tab	Cardiovascular	100%
Glibenclamide 5mg cap/tab	Antidiabetic	100%
Omeprazole 20mg cap/tab	Antiulcerant	100%
Ranitidine 150mg cap/tab	Antiulcerant	100%
Ceftriaxone 1g/vial injection	Antibacterial	100%
Fluoxetine 20mg cap/tab	Antidepressant	100%
Cirpofloxacin 500mg cap/tab	Antibacterial	94%
Amitryptilline 25mg cap/tab	Antidepressant	94%
Co-trimoxazole susp 8 + 40 mg/ml	Antibacterial	94%
Atenolol 50mg cap/tab	Cardiovascular	94%
Aciclovir 200mg cap/tab	Antiviral	89%
Beclometasone 50mcg/dose inhaler	Antiasthmatic	89%
Hydrochlorothiazide 25mg cap/tab	Cardiovascular	89%
Carbamazepine 200mg cap/tab	Antiepileptic	83%
Simvastatin 20mg cap/tab	Cardiovascular	50%
Lovastatin 20 mg cap/tab	Cardiovascular	44%
Atorvastatin 10mg cap/tab	Cardiovascular	11%

Table 3. Total potential cost savings and average percentage savings that could be obtained from switching private sector consumption from originator brands to lowest-priced generics, for a limited basket of medicines

Country (n= number of medicines)	Total potential cost savings (2008 USD)	Average percentage savings across individual medicines*
China, public hospitals (n=4)§	$86,492,276	65.1%
Colombia (n=9)	$3,229,092	88.7%
Ecuador (n=12)	$3,066,407	63.2%
Indonesia (n=9)	$6,405,597	84.2%
Jordan (n=11)	$887,262	55.9%
Kuwait (n=6)	$64,261	9.3%
Lebanon (n=8)	$4,397,432	67.5%
Malaysia, private hospital and retail sectors (n=10)	$7,419,942	67.2%
Morocco (n=6)	$3,175,435	51.8%
Pakistan (n=9)	$12,606,083	51.2%
Peru (n=11)	$2,520,356	78.7%
Philippines (n=9)	$9,415,319	57.1%
South-Africa (n=7)†	$3,461,600	78.9%
Thailand (n=7)	$1,348,669	75.7%
Tunisia (n=3)	$280,001	25.8%
Ukraine (n=4)	$458,892	52.3%
United Arab Emirates (n=12)	$10,671,587	53.0%
AVERAGE	**$9,170,601**	**60.3%**
TOTAL	**$155,900,211**	

* Simple average of the percentage savings for individual medicines.
§ Price data based on 2 surveys conducted in Shanghai (2006) and Shandong (2004) provinces.
† Price data based on a survey conducted in Gauteng province (2004).