Indicators for Tracking the Effect of the Economic Crisis on Pharmaceutical Consumption, Expenditures and Unit Prices

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Executive Summary

The World Health Organization has established a programme to track the impact of the global economic crisis on the consumption of medicines worldwide in co-operation with IMS Health. Programme reports, to be issued quarterly, assess patterns in pharmaceutical usage from 83 countries representing approximately 81% of the global population. This first report examines changes in consumption volume, medicine expenditure, and price changes based primarily on information collected by IMS through the first quarter of 2009. It also measures movement from what traditionally are seen as more expensive branded treatments, as well as those medicines used to treat chronic diseases. These indicators all have been impacted by economic downturns in the past.

Through Q1 2009, although some countries saw a decline in the average price per unit of volume at the point of sale monitored by IMS, several saw an increase. This is associated with an increase in total expenditure on pharmaceuticals in the last half of 2008. At the same time, however, the volume of pharmaceutical consumption does not appear to have been adversely affected in most countries, with the apparent exception of some Eastern European countries. To date, there does not appear to be a major change in overall volume of medicines used, or a specific decline in medicines used to treat chronic diseases -- both of which occurred during the Asian economic crisis of 1997. There is no firm evidence to date that the current economic crisis has had a detrimental impact on access to medicines. Overall, countries have absorbed moderate price increases without affecting medicine consumption.

Historically, the impact of economic crises is rarely felt consistently across countries, and it may be too soon in the current downturn to measure its full impact. The data collection methods and analytic tools that are being applied in this study will enable the WHO to detect significant changes when they occur. When such changes are detected, governments of most countries have a range of policy instruments to address the situation -- from improvement in stock levels of essential medicines to specific programmes designed to sustain health in the more vulnerable parts of society.
Background

On January 19, 2009, the WHO convened a high-level meeting to discuss the Financial Crisis and Global Health\(^1\). One of the key conclusions of this meeting was that "Monitoring early warning signs requires information from different sources." The WHO has put in place a programme to track the impact of the global economic crisis on the consumption of medicines globally in collaboration with IMS. In this report, IMS presents pharmaceutical consumption information from 83 countries worldwide collected by IMS that cover an estimated 5.3 billion people and represent 81% of the global population. In high-income countries, the data represent consumption or sales in both the public and private sectors (where they exist), while in low- and middle-income countries, the majority of the information relates only to the private sector exclusively. Reports will be produced quarterly over the coming year, highlighting any changes in consumption patterns from those seen in 2007 and 2008. They will apply learnings from the 1997 Asian currency crisis, and focus on changes in consumption patterns, expenditures and unit prices.

Objective

The objective is to generate indices that track consumption, expenditure and the price of pharmaceuticals country by country on a global basis each quarter. The indices track the latest available time periods and compare that with data from previous quarters.

Methodology

IMS collects pharmaceutical consumption data from wholesalers, hospitals and/or dispensing outlets such as pharmacies or drugstores. The methodology employed varies by country and is dependent on the nature of their respective health systems.\(^2\) Where IMS does not collect data from all facilities, the sample is projected to a national level for the particular distribution channel being audited by IMS. In middle- and low-income countries, IMS largely, but not exclusively, measures private sector consumption. In those countries where IMS has no access to public sector data, it does not estimate consumption in that sector. Therefore, it is important to review the sectors and distribution channels covered by IMS in its audits.

Two indices were calculated. The first shows the evolution of consumption or price compared with the first quarter (Q) of 2008, which the study considers to be at least one quarter before the current economic crisis began. The second index depicts the change in consumption for a particular quarter compared to the same quarter in the previous
year, enabling seasonality to be taken into account. Any declines in both indices are highlighted in the quarterly report.

Results 2007, 2008, Q1 2009

Global Volume Consumption Index Highlights 2007 – 2008

For 2008, the Western Pacific and South East Asian regions generally showed growth in volume consumption\(^3\) -- even in the high-income countries where consumption growth is typically flat. Consumption in China showed particularly strong growth on a volume basis through 2008, as did Australia and Indonesia. In the first quarter of 2009, growth in China appears to have slowed. Outside of Malaysia, there were no signs of any noticeable decline in the region.

The Europe region is characterized by flat growth on a volume basis in the high-income countries. Some growth occurred in Bulgaria, Croatia and Turkey, but there was little change in the other low- or middle-income countries. In Estonia, however, consumption dropped over three successive quarters, falling to more than 10% below consumption levels in Q1 2008 by the end of the year. That decline continued in Q1 2009. Russia’s out-of-pocket sector (outside of the government-reimbursed sector) also posted three consecutive quarters of declines in 2008.

The Eastern Mediterranean Region is highly seasonal and shows strong declines in Q3 (July, August and September) relative to Q1 2008, making for difficult quarterly comparisons. Over the 2008 full year, U.A.E, Lebanon, Egypt and Pakistan all grew, but consumption growth slowed in Kuwait and Saudi Arabia after Q3. The latest information from Q1 2009 suggests that volumes have recovered in those two countries.

In the Americas, the high-income countries, like their European counterparts, showed relatively low growth in the period. The Dominican Republic demonstrated a moderate decline in consumption on a volume basis relative to Q1 2008, but this is not reflected in the quarter-on-quarter comparisons. Other upper middle-income countries either grew or maintained consumption levels relative to the same quarters in the previous year. In Mexico, while growth was noted in that part of the public sector monitored by IMS, a moderate decline in consumption was seen in the private sector. Lower income countries in the Americas were stable or showed growth in consumption on a quarter-on-quarter basis.
In Africa, a limited number of market audits are performed by IMS. South Africa showed near flat growth compared with both Q1 2008 and full-year 2007. French West Africa, a regional grouping that includes the Ivory Coast, Cameroon, Gabon, Senegal, Congo, Benin, Guinea, Togo, Mali and Burkina, grew consistently for three quarters over Q1 2008, and growth continued into Q1 2009.

**Global Volume Consumption Index: Acute and Chronic Medicines**

Many medicines can be categorized based on whether their primary use is to treat chronic or acute diseases. Experience of the 1997 Asian financial crisis suggests that changes in the economic environment would lead to a decline in volume of those medicines used to treat chronic diseases. While medicines used to treat acute diseases also can be affected, the trends can be more volatile.

Outside Europe, there are few signs that consumption of chronic medicines is declining. Of note is strong growth in both acute and chronic medicine consumption in China, Algeria, Ecuador and Brazil through 2008. In the first quarter of 2009, growth appears to have slowed in Ecuador. In Brazil, while growth in both acute and chronic medicine categories in 2008 was consistent in both the private sector and that part of the public sector monitored by IMS, there appears to have been a drop in public sector volume in the first quarter of 2009.

In Europe, declines in consumption within the Czech Republic and Russia might owe more to changes in the health system rather than economic factors. In Russia, the public sector (not monitored by IMS) is already taking an increasingly significant role, notably in the treatment of cancer. And in the Czech Republic, implementation of healthcare registration fees has led to a significant reduction in demand for prescriptions and the number of items on those prescriptions. Q1 2009 data from the Czech Republic suggests that the volume of chronic medicines appears to have recovered. In Estonia, however, total volume of both acute and chronic medicines seems to be on the decline both in 2008 and in the first quarter of 2009.

**Global Volume Consumption Index: Original and Licensed Brands Versus Other Brands and Unbranded Pharmaceuticals**

Medicines can be divided into two broad categories: original brands plus licensed brands; and other brands plus unbranded medications. Original brands are products developed by private companies that have invested in research and development. This R&D investment is rewarded via market exclusivity and the application of intellectual property
protection for the molecule. Licensed brands are products that are licensed out by an originator company to a company located in another region or country. Original brands and licensed brands typically are higher priced relative to other product types, at least while the patent protection remains in place. Unbranded products and other brands are launched after the loss of exclusivity of an original brand or alongside the original where intellectual property protection is not enforceable. Such products are typically cheaper than their original or licensed counterparts, although in middle- and low-income countries other brands many times are priced at or higher than the original brand. The use of reference pricing also is having a similar effect in many high-income countries.

Pressure on health expenditures during the economic crisis could lead to a movement away from original and licensed brands.

At the end of 2008, few markets had shown a substantive three-quarter decline in the consumption of original and licensed brands. The one exception was Brazil, a market that has shown no overall decline in total consumption, but a clear switch in emphasis toward the other brands and unbranded medicines category in the private sector channel. A similar, if not stronger, uplift was seen in that part of the public sector in Brazil audited by IMS. During 2008, Brazilian authorities approved price increases on key therapeutic groups in the private sector -- so this change in consumption is likely to be the result of policy changes in the market rather than the economic crisis. In the rest of the Americas, Puerto Rico shows a decline in the consumption of original and licensed brands over the three quarters to Q1 2009 and signs of growth in the unbranded sector. Overall, this market had shown flat growth in consumption throughout 2008.

In the European region, high-income countries tend to show relatively flat growth in other brands and unbranded products. The private sector in Russia, however, shows a consistent decline in the other brands and unbranded category, which also may be the first signs of a decline in the original and licensed brand category. A similar analysis is not available for the Baltic region.

In the Western Pacific region, the latest information from Q1 2009 indicates a slowing of growth in both categories of medicines, but no country shows consistent evidence of decline in original and licensed brands.

In South East Asia, Indonesia shows a decline in consumption of original and licensed brands but overall growth in consumption for other brands and unbranded medications. Bangladesh shows signs of decline in both categories of medicines in the early part of 2008, but a recovery later in the year.
Global Pharmaceutical Expenditure Index

Many country sectors audited by IMS showed significant growth, particularly in the quarter-on-quarter analysis, notably:

- Argentina, Brazil and Venezuela in the Americas Region
- U.A.E and Pakistan in the Eastern Mediterranean
- Romania, Russia, Turkey and Ukraine in Europe
- Indonesia in S.E. Asia
- China in the Western Pacific, and
- South Africa (both public and private sectors) and Algeria in the Africa region

In many cases, growth in pharmaceutical expenditure has been matched by evidence of volume growth (for example, in Argentina, Brazil, U.A.E, Pakistan, South Africa [public sector] and China). Such a change also may be the result of higher prices charged for the same product, new product introductions or a shift to more expensive products overall. This is explored in more detail in the next section.

Global Price per Standard Unit Index

Several countries are seeing growth in the Global Price per Standard Unit Index. The Price per Standard Unit Index represents total reported sales divided by total volume for each country for each quarter. Movements in this index are not necessarily a sign of higher prices but may be the result of new product introductions, increases in generic market share and/or government policy as it relates to reimbursement prices and approved margins through the distribution chain.

In the Africa region, South Africa had consistent growth in the price index in the private sector. The weakening of the Rand relative to other currencies certainly has had an effect on pharmaceutical companies in South Africa. Permission was granted at the beginning of 2009 for price increases across the board, after some price increases were also allowed earlier in 2008. There was growth in the price index in the public sector in the early part of 2008, but this has not continued in the latter half of the year.

In the Americas, Argentina, Chile and Venezuela showed consistent increases in the Global price per Standard Unit index through the first quarter of 2009. In Argentina, price rises between 3%-20% were reported in July 2007, and price agreements were negotiated individually between the government and manufacturers.
In the Europe region, Romania, the private sector in Russia and the Ukraine saw an increase in the Global Price per Standard Unit Index. In Romania, a change may occur in 2009 as new therapeutic reference systems come into play, but in the private sector in Russia early signs indicate that prices continue to rise. The Netherlands is the only country to show sustained and significant decreases quarter-on-quarter in this index, with most high-income countries remaining relatively flat.

In South East Asia and the Western Pacific regions, only China shows any evidence of an increase in the Global Price per Standard Unit index, but even there the data presents an inconsistent picture.

Some of the increase may be due to increases in list prices rather than actual prices -- with significant pharmacy purchase discounts offered and frequent claw backs by governments. The major reason for such prices increases is likely a decline in national currency exchange rates with a decline in purchasing power. Some countries, including Canada, Puerto Rico, the U.S., Uruguay, (Public), The Netherlands, Australia and New Zealand, had declines in prices per standard unit in at least three quarters during the time period studied when compared with the same quarter in the prior year.

**Conclusion**

Compared with the five quarters before the economic crisis began, there has been little change in consumption of medicines in the most recent five quarters to Q1 2009. This may be the result of pipeline supply, the protective effect of social health insurance (where it exists) or ongoing attempts by governments to maintain health systems. Alternatively, it may just be too early to detect the impact of the economic crisis in the data so far collected by IMS.

Declines in the volume of pharmaceutical consumption generally do not appear to have occurred, with the exception of Estonia and the private sector in Russia where three consecutive quarters of volume decline have been observed. To date, there does not appear to be a major change in the volumes of original and licensed medicines used or a decline in the consumption of medicines used to treat chronic diseases.

From the data available to Q1 2009, it appears that the global economic crisis has not yet had an impact on pharmaceutical consumption overall. Previous economic crises demonstrate that the impact is rarely consistent across countries. While it is sometimes difficult to isolate the impact of economic crises from changes in government policies, the data collection methods and analytic tools used in the study will enable detection of significant changes if and when they occur. When changes are detected, governments have a range of policy levers that can be applied to address the situation.
IMS Health is the gold standard in pharmaceutical and healthcare market intelligence, relied on by virtually all of the world’s largest pharmaceutical companies — along with government agencies, policymakers, researchers and financial analysts around the globe. IMS tracks more than 1.5 billion healthcare transactions each month, from more than 130,000 suppliers worldwide. This data, integrated with leading analytical expertise, plays a central role in supporting high-quality, cost-effective healthcare.

2 Information available from IMS Health
3 Volume has been measured in terms of a standard IMS derived measure of the number of doses called a Standard Unit (SU). This should not be confused with the WHO’s Defined Daily Dose (DDD). An SU is measured differently depending on the formulation of the medicine. By and large, one SU usually equals one tablet, one capsule, one suppository or pessary, one pre-filled syringe/cartridges, pen, vial or ampoule, one dose of an inhaled medicine or 5ml of a oral syrup or suspension. SUs of topical treatments, granules, powders, pellets, eye and ear preparations vary depending on the exact composition of the product but can be based on millilitres or grams. In addition in some countries an SU of a reconstituted product will treated as mg. The IMS SU is nevertheless consistent allowing time trend analyses to be carried out within countries over time. Care is sometimes needed if comparing across countries given the differences in formulations available in different countries. A more detailed document is available on request from IMS