PHARMACEUTICAL EXPENDITURE COMPARED ACROSS COUNTRIES

C. van Mosseveld

European Commission, EUROSTAT, Directorate F, Social Statistics and Information Society, Unit F5, Health and Food Safety Statistics

Corresponding author: Cornelis.VAN-MOSSEVELD@cec.eu.int

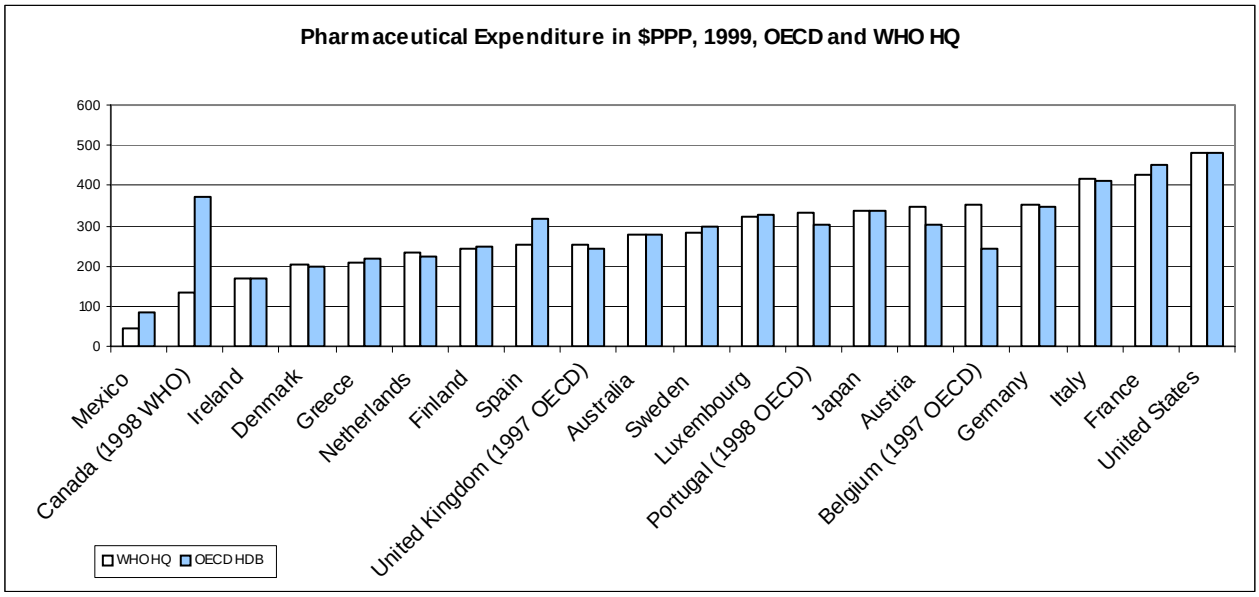
ABSTRACT

Pharmaceutical expenditures for 20 member countries of the Organisation for Economic Co-Operation and Development (OECD) are discussed and the appropriateness of making comparisons amongst these countries is addressed. This is a summary of a lecture presented at the International Conference on Pharmacoepidemiology in 2004.

Key Words: *Organisation for Economic Co-Operation and Development (OECD), expenditure, international*

Pharmaceutical expenditures for 20 member countries of the Organisation for Economic Co-operation and Development (OECD) are presented in figure 1, using data from the OECD Health Database and data provided by the World Health Organisation (WHO) Geneva. The per capita data are expressed in Purchasing Power Parities (PPP) in constant US dollars. The USA presents the highest per capita expenditure of all countries included in this example. Although the figure represents real data supplied by national statistics authorities to the international bodies, the appropriateness of making comparisons amongst these countries with these data is questionable and will be discussed in this paper.

FIG. 1



Sources: OECD Health Database, 2004, 1st edition
WHO HQ: National Health Accounts (NHA), Resource Flows, Expenditures and Risk Protection (RER), Department of Health System Financing, Expenditure and Resource Allocation (FER), Evidence and Information for Policy (EIP), WHO HQ (Geneva)

Comparability

When discussing the comparability of health care expenditure[1] the topic of comparability itself requires some reflection. Comparable results can be valuable but they are not necessarily apparent to everybody using the data. Comparability is a relative notion. Comparable results for one user may be completely different or incomparable for another user. The user and the use that is made of the data determine the level of comparability. Total comparability is a fiction, a situation that can never be reached. Comparability deals with commonalities as well as differences and criteria are needed to determine levels of comparability.

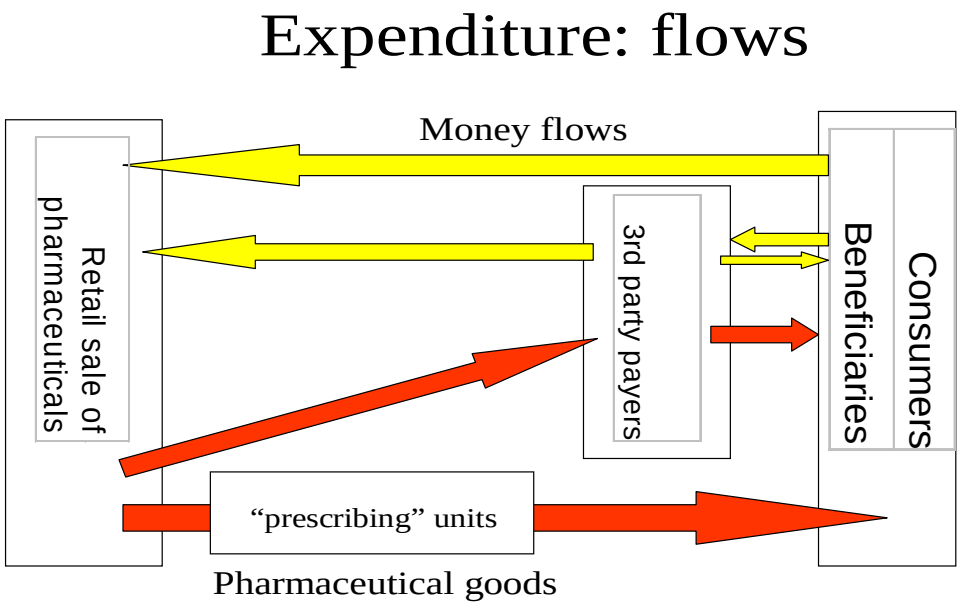
Eurostat[2] (the statistical office of the European Union), one of the most important players in the field of comparability, created a definition[i] on comparability based on theoretical research as well as practical considerations. With this perspective, comparability encompasses the issues of populations (not only people, but also phenomenon), various countries, and statistical data that are aggregated and manipulated in a way that has meaning for the user of the data.

Expenditures

According to the System of National Accounts (SNA)[3], "expenditure is a way to express the exchange of goods and services, i.e., when the purchaser incurs a liability from the seller, for cash from the paying or purchaser's point of view." From this definition of expenditure as defined in SNA as well as in the European System of Accounts (ESA)[4], the national accounting systems used in the world, it can be derived that expenditure has much to do with exchanges between parties. Predominant in this definition is the point of view of the purchaser, the one that purchases.

Health care expenditure differs from other expenditures. Purchasers in the health care branch are not always the ones actually receiving the goods or services, i.e., the beneficiaries. Expenditures for goods and services may benefit people who are not always the payers of the bill either completely or only partially. In health care, and certainly in pharmaceutical transactions, the flows of expenditure are important, which means to find out what is exchanged by whom for what.

FIG. 2



Can J Clin Pharmacol Vol 12(3) Fall 2005: e269-e275; Dec. 1, 2005

In figure 2 a stylised model of the flows concerning pharmaceutical expenditure is presented. On one side there are pharmaceutical sellers or suppliers (representing suppliers to the general public, not suppliers delivering goods to retailers e.g., pharmacies or to hospitals). On the other side there are the consumers or beneficiaries. Health care, however, is one of the few branches in which third parties play predominant roles; the third party payers. This can be social security institutions, private insurance companies or government and governmental organisations as well as private companies. Another peculiarity of the health care market is that the majority of the goods and services delivered or used are prescribed by physicians or other providers of health care.

For comparability reasons, it is just as important to know what is exchanged and for what and by whom, as it is to know where the amounts transferred are measured. But when answering these questions there are different viewpoints to consider. From an economic production point of view, the sellers as "producers of the services" are the measuring point. For society at large it is important to know what beneficiaries get and how much is spent on it. Managers in the field of financing would like to have insight in the expenses of the third parties they represent. Health economists usually are interested in how much is going into the health care system. Researchers, like pharmaco-epidemiologists are interested in what is received for the money spent, e.g. in DDD of certain pharmaceuticals for specific diseases (according e.g. ATC). All these different viewpoints provide different results on the term expenditure. All are correct, but serve different purposes.

Until now (in this article) only the term expenditure was used. Also expressions such as, money spent on, or money going into the system are used. Managers, the government officials, journalists and sometimes even economists use all these terms as synonyms of expenditure and also as a synonym for costs. By health accountants health care expenditure or cost is usually described as the financial representation of the society to maintain the health system, and as such also the pharmaceutical expenditure in it. While this possible mix of terminology is not detrimental to a national system, comparability (between systems) will suffer.

Other sets of expressions influencing the level of comparability have to do with measuring in quantity or in money terms. Governments are especially interested in the quantities of pharmaceuticals supplied to the nation. Trying to determine these brings up the problems of exchange rates and price differentials. Sometimes the value in money terms is available; sometimes the quantities delivered are available as well as individual prices in national currency or in foreign currency. Some statistical calculation methods are needed to get a complete picture of the value, quantities and prices of the goods delivered and consumed.

A second issue concerns the provision of pharmaceuticals, the distinction of goods supplied to in-patient and to out-patients. Although within one country the location where the goods are supplied may not be of concern, for comparisons between countries it may be relevant that these goods are provided in an in-patient setting in one country and delivered in an out-patient setting in another. These different systems can lead to skewed results and hence a lack of comparability.

Data and Data sources

Having considered the boundary and definition problems, the data to be used pose another hurdle. Some important sources of data in an international context can be distinguished. SNA type of data are collected by Eurostat and presented in their New Cronos[5] system. National health accounts also create data presented e.g. by the OECD Health Database.[6] As well, some specific data collections can be used, although one must be aware that specific data sources are created for specific purposes, which are not always comparability of expenditure across countries.

Without going into detail on the differences of the data sources, some issues deserve particular mention. SNA includes all activities in the economy, using a specific set of rules. In SNA the retail trade on pharmaceuticals is included (in retail trade class and not in the class of health and social care). However, SNA does not include total turnover but only the value added created by the pharmacies (the so-called trade margins).The OECD database on the other hand

provides information on all products related to health care. The OECD database provides information on total turnover of all products related to health care; including not only medicines but also other non-durable goods like wound dressings. The data collected by WHO[7] uses the same definition as the OECD does. Other sources that can be distinguished, like IMS, use their own sets of definitions and boundaries and are created to serve specific purposes. The purposes can be in line with the ones needed for comparability but they need not be.

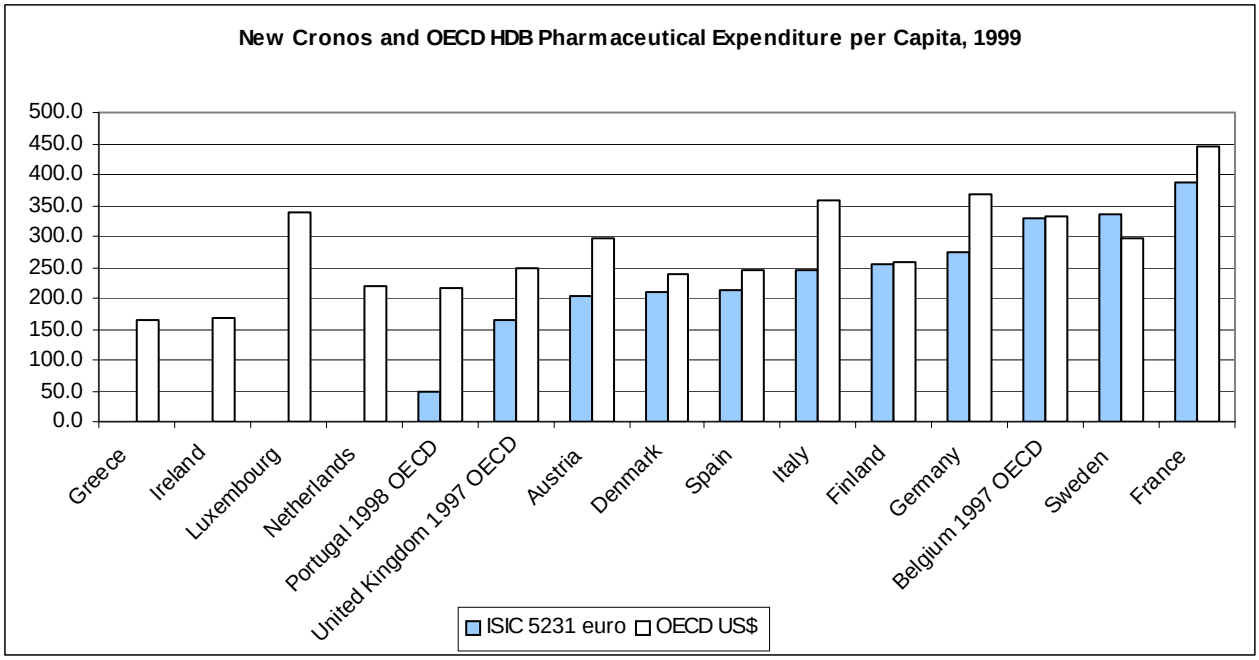
FIG. 3

Data sources
OECD Health DataBase

Expenditure on Health
Medical goods dispensed to out patients
Pharmaceuticals and other medical non-durables
of which:
– total expenditure
– expenditure on prescription medicines

In figure 3 the structure of one of the better databases used in cross-country comparisons is presented. On the highest level of aggregation in the health care expenditure is medical goods dispensed to outpatients. It must be noted that in-patient provided medical goods are not included in the item medical goods. Below that level the pharmaceuticals and other non-durable products are distinguished. At the lowest level the expenditure on prescribed medicines is given.

FIG. 4



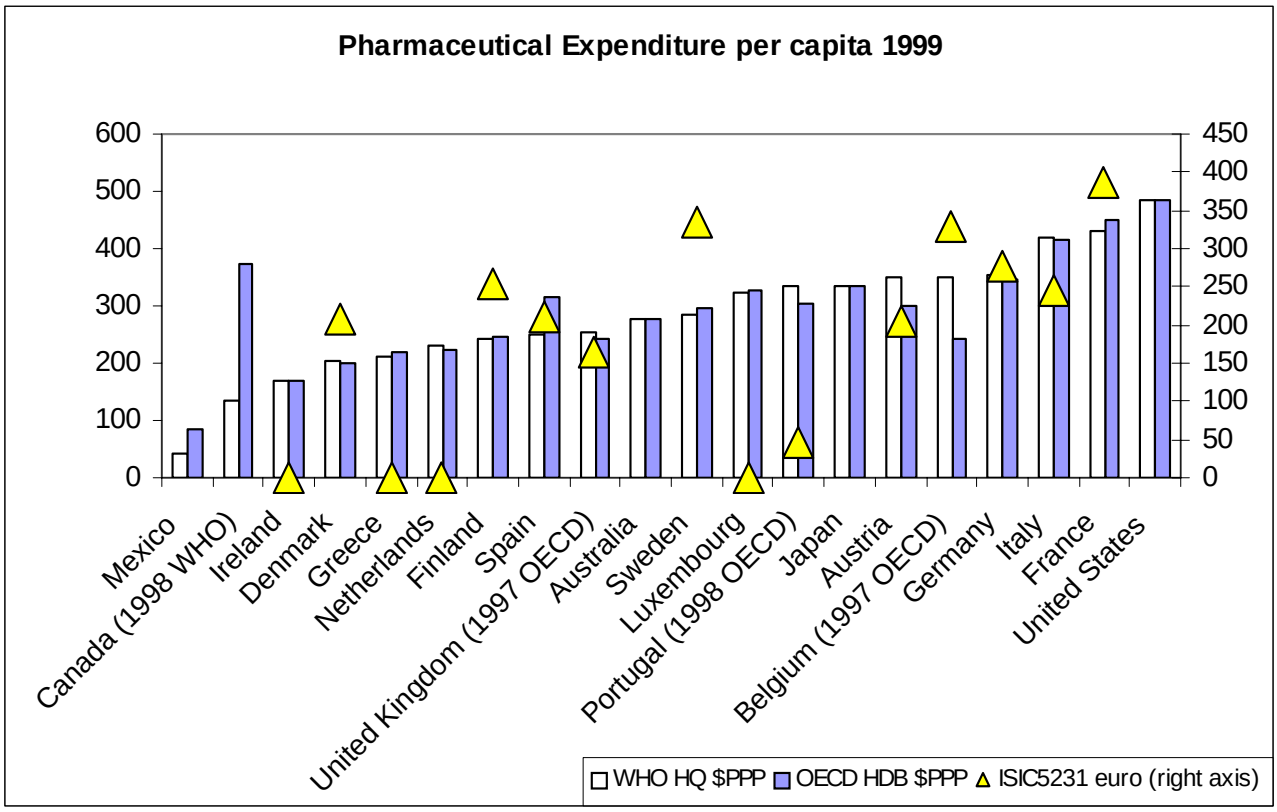
Sources :OECD Health Database, 2004, 1st edition; Eurostat New Cronos 2004

Can J Clin Pharmacol Vol 12(3) Fall 2005: e269-e275; Dec. 1, 2005

In figure 4 the data as presented by New Cronos of Eurostat are compared to the data of the OECD health database for the 15 European Union (EU) Member States. OECD data relate to pharmaceutical products delivered to outpatients expressed in US dollars. Data in New Cronos are expressed in EURO and relate to ISIC[ii] 5231: Retail trade by pharmacies.

It is striking that New Cronos provides no data for some countries while the OECD does present data on pharmaceutical goods for exactly the same countries. Another point of interest is that not only are the levels of expenditure between the two sources different but also the ranking of the countries differs for the two sources.

FIG. 5



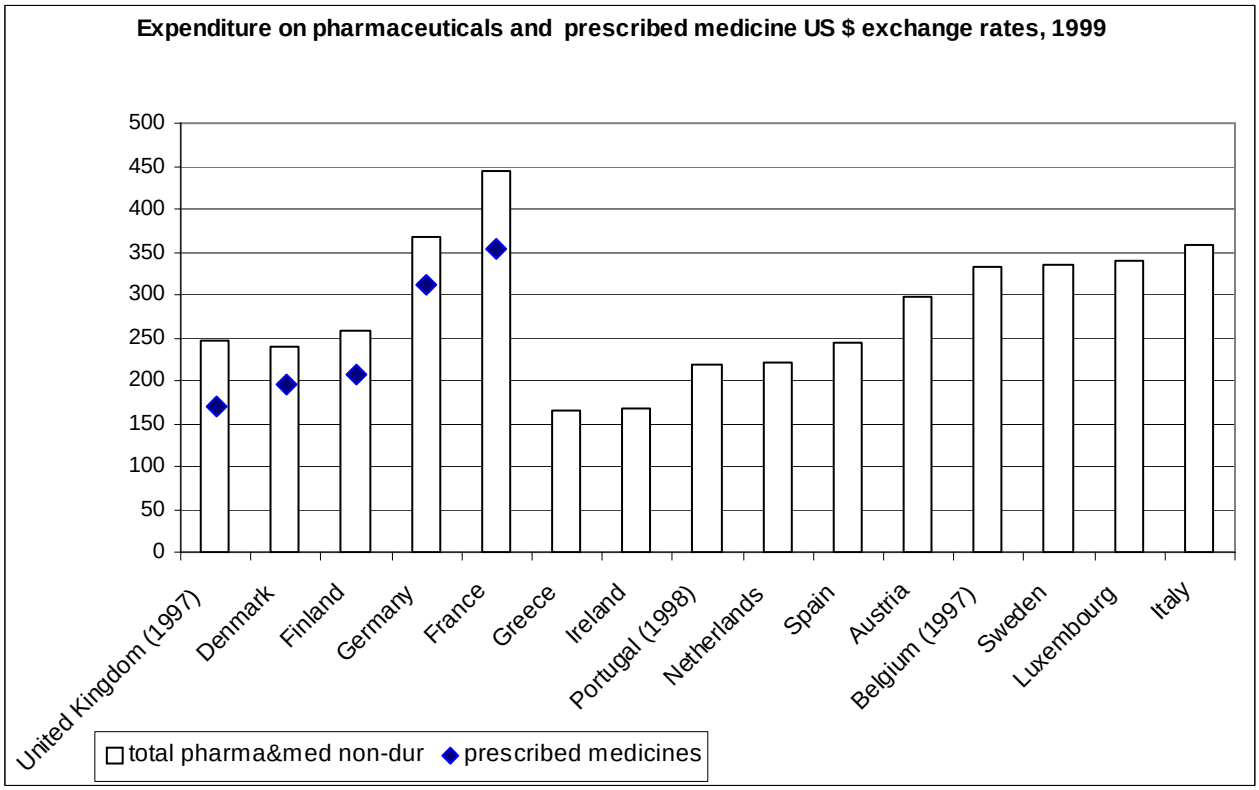
Sources: OECD Health Database, 2004, 1st edition; Eurostat New Cronos 2004, ISIC 5231: Pharmacies;
WHO HQ: National Health Accounts (NHA), Resource Flows, Expenditures and Risk Protection (RER), Department of Health System Financing, Expenditure and Resource Allocation (FER), Evidence and Information for Policy (EIP), WHO

Adding another source, the WHO data on pharmaceutical expenditure, shows some other interesting points (figure 5). Having the same definitions and boundary as used by OECD, the different positions of Canada and Belgium in the two sources are peculiar. Without having more detailed background information or meta data (similar to what is collected in e.g. the EUCOMP projects[8]) it is impossible to explain the differences. Looking at these data one may conclude that France and Germany are big spenders on pharmaceutical products, but it is not appropriate to conclude that these two countries spend over twice the amount per capita compared to Ireland. Creating comparability for various countries in the data sources, as well as creating comparability for a single country across data sources, is difficult and sometimes even impossible.

Expenditure on Prescribed medicines and Pharmaceutical goods

For persons interested in knowing something about the amount of money spent on prescribed medicines, a reference can be made to the OECD database. This is one of the items in it. But as can be seen in figure 6 only a limited number of countries provide information on this item, UK, Denmark, Finland, Germany and France. All the other countries do not provide this information because it is not available or not deemed reliable.

FIG. 6



Source: OECD Health Database, 2004, 1st edition

CONCLUSIONS

One must conclude that international comparability of health care expenditures is a difficult task because health care systems are so diverse across the world. Comparing pharmaceutical expenditure is even more difficult, because of the various viewpoints used, definition and boundary issues. The databases providing information do not offer comparable information for all users and all uses, and more importantly these databases often do not provide the information at the level of detail needed for the users. Despite these problems, the quality of the databases (especially on expenditure) is rather good. Using the information stored in the databases in a rational way assumes that the users have knowledge of the contents of the database and the processes that resulted in the data. The international community would profit by investing to further improve the quality and the quantity of data to be included in the databases.

Can J Clin Pharmacol Vol 12(3) Fall 2005: e269-e275; Dec. 1, 2005

REFERENCES

1. International Comparison of Health Care Expenditure; Existing Frameworks, Innovations and Data Use; Statistics Netherlands, Voorburg/Heerlen, 2003.
2. http://epp.eurostat.cec.eu.int/portal/page?_pageid=1090,30070682,1090_33076576&_dad=portal&schema=PORTAL
3. http://www.imf.org/external/np/sta/sna/2001/eng/update/index.htm
4. http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/g1006856.htm
5. New Cronos is Eurostat's statistical reference data base, containing freely accessible statistical information for European Member States. http://www.esds.ac.uk/international/support/user_guides/eurostat/cronos.asp
6. http://www.oecd.org/document/30/0,2340,en_2649_37407_12968734_1_1_1_37407,00.html
7. http://www.who.int/en/
8. EUCOMP is the acronym for Towards Comparable Health Care Dats in the European Union. http://europa.eu.int/comm/health/ph/_projects/2002/monitoring/monitoring_2002_02_en.htm

[i] Definition comparability: Data for different populations can be legitimately put together, compared and interpreted in relation to each other and against some common standard

[ii] ISIC: International Standard Industrial Classification