

## Comparing health indicators at the city level – the example of Vienna

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### Abstract

**Background.** Various projects have identified the need for common indicators for comparing countries and more recently, regions. The Vienna publication aims to contribute to this discussion.

**Methods and Results.** While not perfect, aggregate measures such as life expectancy and mortality can act as indicators of the general level of health in international comparisons. They are relatively reliable and easily accessible and are often available at regional levels.

**Conclusion.** Despite their limitations, international reference values provide relevant information on the position of a country or city within Europe. They can provide inspiration and motivation for policy makers and visualise past successes.

**Key words:** *health indicator\*, compare\* (comparing/comparability), regional cit\* (city/cities)*

### Introduction

There is still relatively little information that allows benchmarking of patterns of health at the regional level. Various projects have undertaken the difficult task of finding some common indicators for comparing countries or regions. The best-known examples are the still running ISARE (Indicateurs de santé des Régions Européennes – Health Indicators in the European Regions) and ECHI (European Community Health Indicators) projects and the achievements of the Danish Institute for Clinical Epidemiology (DIKE), the WHO (Healthy Cities Project) and Eurostat.

As a contribution to the current international discussion on the comparability of health indicators, the City of Vienna recently published a report comparing various health indicators at both national and city levels. While well aware of the difficulties of selection and comparability of health indicators, Vienna took a more pragmatic and traditional approach, without claiming scientific rigour. Austria was compared to other European countries with regard to age structure, life expectancy, overall and infant mortality, causes of death, and years of potential life lost. Wherever possible, this comparison was also made at city level.

### Methods and problems of data collection

In various international projects, many indicators have been discussed or newly developed. However, many proved unsuitable for comparison between different countries or regions and had to be discarded. At the national level, difficulties lie in different socio-economic,

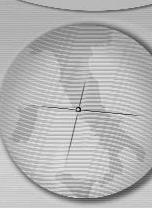
political and administrative structures, different cultural backgrounds, and, in particular with health indicators, in different health care systems.

It is particularly difficult to develop truly comparable indicators that would allow conclusions on the quality of life and health care or provide information on a population's health status, not its disease status. In addition, once these indicators have been developed, the problem of data collection arises, requiring respective administrative bodies and individuals in each country.

At the regional level, comparability is even more difficult. First of all, "region" must be defined (city, district, province, etc.). Other factors are the geographical size of the region, population size and density, age structure, socio-economic structure, and, for cities, the administrative status, type of city (industry, business, culture and heritage, administration, concentration of international organisations, etc.), and, increasingly, the proportion and type of migrants.

Moreover, if one or more common and comparable indicators were found fulfilling all the above criteria – how many cities or regions would there be left to compare with each other?

In the end, it would seem that aggregate measures such as the traditional health indicators, life expectancy and mortality, still fit in with the few relatively reliable, easily available (often also at the regional level) and somewhat comparable indicators. Besides, life expectancy and mortality can act as indicators of the general level of health of a country. Based on these results, further investigations with regard to reasons and



explanations for any differences observed can follow suit.

To date, there are hardly any publications on health data at a regional level. For the Vienna publication, several data sources had to be sought. The *City of Vienna Statistical Yearbook* proved very helpful. This annual publication also includes some demographic and health indicators for other European cities, such as size of region, population size and density, proportion of the population aged under 15 or over 60 years, birth rate, mortality rate, infant mortality, migration, and proportion of foreign nationals.

However, much data had to be collected or updated directly in the individual countries or cities. Regional statistical offices were contacted where available; if not, the national statistical offices or the internet were used as sources. It may seem marginal, but personal contacts and, particularly in countries such as Italy and France, basic knowledge of languages other than English proved useful for data collection.

Once the data has been collected, the question of data quality must be considered, particularly with regard to data at the city level. There are huge variations as to the "most recent" data. Some cities are several years behind others. Some cities also provide indicators for every year, others in intervals of several years, and sometimes only a two (or more) year average is provided. Additionally, not all health indicators are available for every city, and most of the bigger cities include the greater metropolitan area in their figures (e.g. Vienna, Brussels, Geneva, Lisbon, Paris, Milan, Rome, Hamburg), while others don't, and sometimes the researcher does not know.

Moreover the problems of comparing different cities become particularly evident with regard to the share and type of foreign nationals. The actual share of immigrants may be altered by naturalisation, the extent of which depends on the legal practice in a country or city. In Vienna, for instance, it takes about 10 years to get the Austrian citizenship. Switzerland is also known for its more restrictive handling. In comparison, citizenship is more easily acquired in London, Paris, or Amsterdam. As a consequence, although the share of immigrants may be very high in these cities, a large part of them may not show up in the statistics. The type of foreign nationals has to be borne in mind as well when comparing cities, as it is the socio-economic status and educational level in particular that make for differences in health behaviour or demographic indicators (e.g. infant mortality, life expectancy, etc.).

The Vienna report is largely based on a graphical

presentation, including geographical mapping. The latter is becoming increasingly popular in health reporting as it allows for the quick evaluation of a country. The ranking of course depends on which cities are included.

## Results

Vienna, being not only the federal capital and the biggest city in Austria, but also one of the nine federal provinces, has its own administration, including a largely autonomous public health administration. Considering its 1.55 million inhabitants, it is very small compared to London or Paris, but relatively big when compared to other capitals such as Helsinki, Stockholm, Copenhagen, Oslo, or Amsterdam. Its size is comparable to that of Hamburg, Budapest, Warsaw, Barcelona, Milan, or Munich.

Twenty-four percent of Vienna's inhabitants were not born in Austria and 16% do not have Austrian citizenship. Almost half of the immigrants (44%) originate from states of the former Yugoslavia; 16% are from Turkey, 10% from EU countries, and the remaining 31% are mainly from Eastern Europe. With its high share of immigrants, most of them with a very low educational level and a high rate of illiteracy (86% are first generation immigrants), the situation in Vienna is similar to Munich and Hamburg. However, Vienna is very different from other cities that have an equally high foreign population which are, in contrast, composed of experts, high profile workers, employees of international organisations, or diplomats, as is the case in Geneva, Zurich, Brussels, or Frankfurt.

The Vienna report is based on data that were readily available: age structure, life expectancy, mortality, causes of death, and lost years of life.

Looking at life expectancy, Paris ranks highest with 83.4 years for women (which is particularly striking) and 77.1 years for men. While the first two and the last three cities rank equally high or low for men and women, gender-related differences in ranking can be perceived for the others. Bonn and Milan have a particularly high life expectancy, while Prague, Warsaw and Copenhagen are at the bottom of the table. Rome, Vienna, Hamburg, and Cologne are in the upper or middle range, depending on sex (Figure 1).

Infant mortality is highest in Genoa, followed by Warsaw and Budapest. The lowest rate was found in Barcelona, but Prague has an extremely low rate as well. For most other cities, infant mortality was around 4 to 5 deaths per 1000 live births. In most European cities, however, infant mortality is already so low that one or two fatal multiple

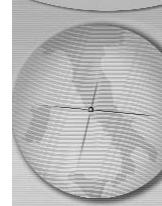
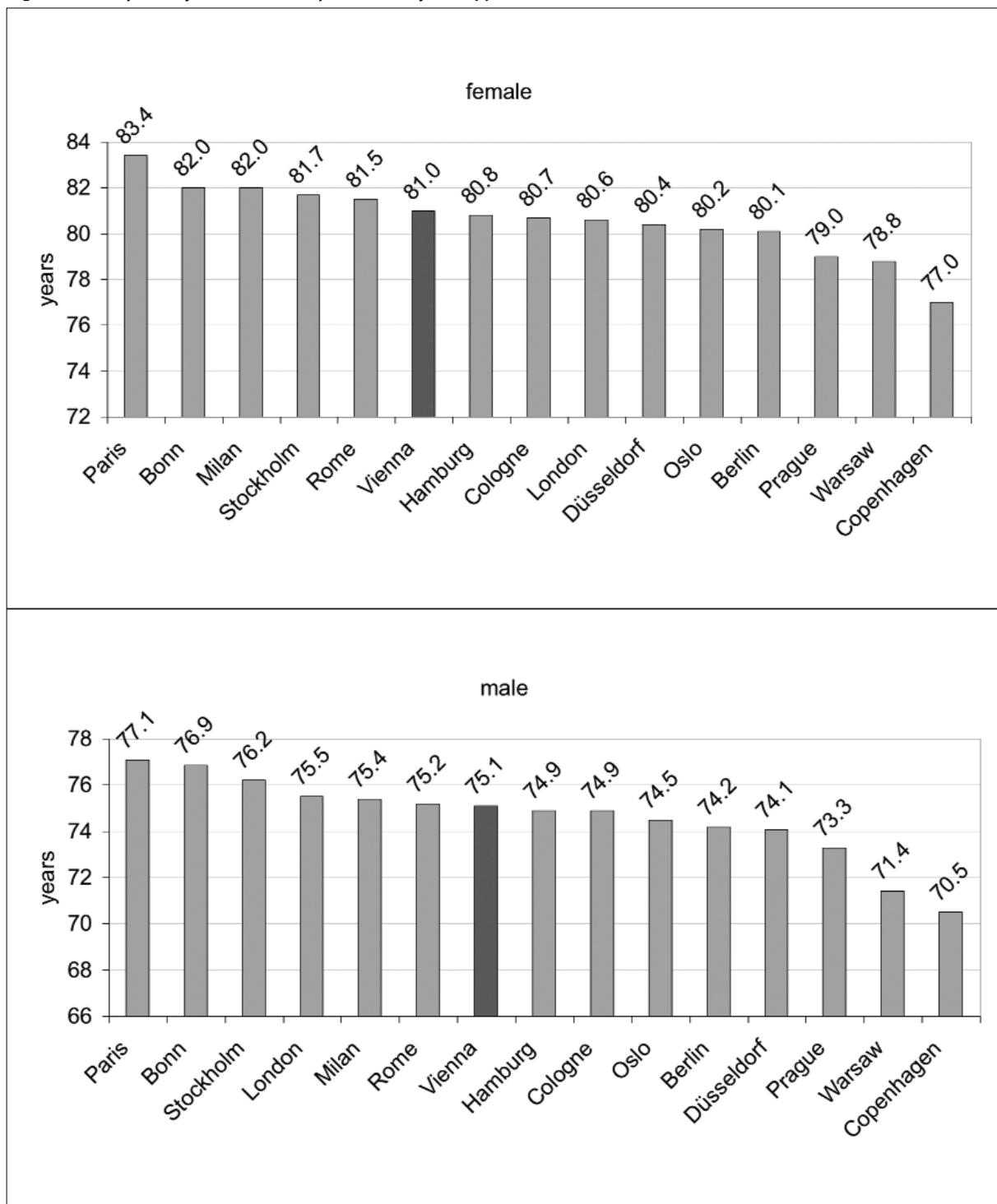


Figure 1. Life expectancy in selected European cities, by sex, 1998-2000

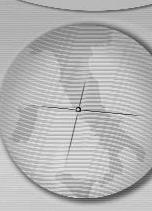


births can change the rate significantly, particularly in smaller cities such as Vienna. Overall mortality was highest in Budapest and Genoa, lowest in Paris.

### Discussion

While international reference values certainly can provide relevant additional information on the position of a country or city, a closer look at

them also reveals the limitations of direct comparisons. The mere ranking reveals nothing about the reasons for these differences and no direct conclusions can be drawn as to the quality of the respective health care systems. Finally, it has to be borne in mind that these are average levels that do not take other demographic or socio-economic factors and the sometimes huge variations within an entity into account. In Vienna,



for example, the differences in life expectancy between the 23 districts vary up to almost 4 years; in Austria, the east-west gap in life expectancy is 2 years. In bigger and more heterogeneous countries, such as Germany, France or Great Britain, the gap between east and west or north and south may be much larger.

The Vienna experiment may be regarded as a first step in the difficult process of comparing different regions, or merely as a different approach to the currently running ISARE and ECHI projects.

In view of all this, what is the value of such unequal comparisons? It could be argued that, despite their limitations, international reference values provide relevant additional information on the position of a country or city within Europe. Their publication can provide inspiration and motivation for improving the national public health care policy and visualise past successes. The increasing globalisation and enlargement of Europe entail new challenges and opportunities in the area of public health for all European governments. Common needs and the comparison of health statistics can therefore become a driving force for identifying common priorities in public health care policy.

This report is available in four languages. To order or download: <http://www.wien.at/who/berichte/index.htm>.