

## Summary

The present project is executed within the framework of the Health Monitoring Program (HMP) of the European Commission (EC). The goal of the HMP is to provide relevant and timely information about the health in each Member State. The present project focuses on methodological issues related to comparability of information. To avoid unnecessary duplication, the new health monitoring system will have to be fed by existing data. These data are collected by the individual member states, usually by the statistical office or by a public health institute. Incomparability of information is a major problem in this context. Each Member State has its own tradition in collecting and processing data, and changing established ways of working is not so easy.

This report contains the results of a pilot project. The goal of the project is to develop and demonstrate a new technology, called *response conversion*. More specifically, the project set outs to

- to demonstrate the response conversion methodology on a practical problem,
- to identify key problems, if any.

The method will be illustrated by applying it to two disability areas, walking and dressing disability, but the potential field of application is much broader.

The method consists of two steps. The first step involves the construction of a so-called *conversion key*. This is a relatively complex activity, but needs to be done only once. In the second step, one uses the conversion key to convert prevalence information from individual Member States into a common scale. This step is simple, and can be repeatedly done on a routine basis as new information arrives. The present report includes both steps.

The primary reason why the technique works is that it systematically exploits any overlap in existing information through a well-established statistical model. A *linkage map* is a systematic way of arranging overlapping information, and forms the basis for the statistical analyses. The statistical model relies on *item response theory*, which embraces sophisticated techniques (like Rasch analysis) that have been developed within educational research.

The technique only works if enough overlapping information in the existing information can be found. Therefore, the major danger in practical application of the technique is that linkage may not be possible. For walking and dressing disability, this situation did not arise, and a conversion key could be made. The properties of the statistical model are well known, but application of it in a new environment brings some fresh methodological problems. Important topics for further development are, e.g. how to measure the quality of the conversion key, how to properly account for the uncertainty and translation errors, how to assess the fit of the model, and so on.

The most important asset of the methodology is that it allows the expression of *existing* information onto a common scale. The values on the common scale can subsequently be used to compare and monitor health indicators of different countries. The method thus allows setting up a health monitoring system without the need to drastically change established ways of working.

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