

Executive Summary (English)

The aim of this study is to estimate the total direct cost of all non-communicable diseases (NCDs) in Switzerland, as well as the direct and indirect costs of seven selected groups of non-communicable diseases. As a first step, a literature search is performed, adopting the *Global-Burden-of-Disease* study by the WHO as a predetermined framework for the classification of diseases. For the first time in the case of Switzerland, aggregate health costs are hereby systematically subdivided into different groups of health care utilization.

The estimation of health care costs follows two different approaches:

3. In a *data-based approach*, the aggregate total cost of Swiss health care in 2011 is separated into groups of different causes of health care utilization. In doing so, top-down and bottom-up methods are combined and a variety of data sources are used, which refer to the prevalence of diseases and treatment expenses.
4. In a *literature-based approach*, the direct and indirect costs of seven groups of selected NCDs are estimated using the results of Swiss and foreign cost-of-illness studies. To this end, a profound literature search is performed and the results of selected studies are extracted and translated to the case of Switzerland in the year 2011.

The principal results can be summarized as follows:

- According to the data-based approach, NCDs account for 80.0% of the total annual health expenditure of CHF 64.6 bn. 51.1% are caused by the seven selected groups of NCDs, while 28.9% are related to the remaining NCDs. Non-NCDs are attributed with 14.7% and non-diseases (such as pregnancy without complications) with 5.3%.
- According to the literature-based approach, the seven selected groups of NCDs generate direct costs of CHF 38.0 bn total (58.8% of total annual health expenditure) and indirect costs of CHF 41.1 bn.
- Hence, both approaches yield a similar size of direct costs attributable to the seven selected groups of NCDs. The costs of cardiovascular diseases (CHF 10.3 bn total) and musculoskeletal diseases (CHF 8.7 bn to 11.4 bn total) constitute the largest share, followed by psychological disorders (CHF 4.0 bn to 5.0 bn total), chronic respiratory diseases (CHF 1.6 bn to 3.9 bn), dementia (CHF 1.0 bn to 2.5 bn) and diabetes (CHF 0.8 bn to 1.0 bn).

These results can be considered reliable, as the top-down approach provides a bound for the estimations, and since various sets of representative data are used. The estimation of direct costs caused by the seven selected groups of NCDs appears more robust if the data-based approach is employed. The only exception to this is given by the costs of dementia. They

seem to be underestimated by the data-based approach, which in many cases does not distinguish between costs of dementia and costs of psychological disorders.

The results of this study create a general framework for the analysis of direct costs of specific diseases and risk factors in Switzerland. It can be used in the future to validate the plausibility of results of cost-of-illness studies. Hereby, a frequent criticism of cost-of-illness studies is addressed, which states that the sum of the costs of single diseases exceeds the aggregate total cost of health care. Increasing the quality of cost-of-illness studies is also a vital input to cost-effectiveness-analyses of novel medical products. Finally, this study creates a general bound to the costs of avoidable risks such as physical inactivity, problematic alcohol use, or smoking.