Management Summary (english)

What are the societal costs of individual diseases and health-related risk factors in Switzerland? How have these costs developed over time? And what are the main drivers of health care spending? This study provides answers to these questions.

The study estimates the monetary costs of non-communicable diseases (NCDs), communicable diseases (CDs) and all other causes (illnesses, injuries, etc.) in Switzerland in 2012, 2017 and 2022. The monetary costs include the health care spending and the production losses due to the lost ability to work of those who are ill. In addition, we present the healthy life years lost (DALYs) according to the Global Burden of Disease Study (GBD Study) for Switzerland. The study calculates the monetary costs of all causes on three hierarchical levels with increasing granularity, and the health care spending and production losses of the risk factors physical inactivity as well as overweight and obesity.

Health care spending (direct medical costs)

Health care spending includes all expenditure in the health care system and was analysed by cause, 20 health care services, 17 payers, 20 age groups and sex. The causes were divided into five broad categories, 21 disease groups and 66 individual diseases.

At *CHF 65.7 billion, NCDs accounted for 72%* of total health care spending in 2022, while *CDs accounted for 9% at CHF 8.1 billion*. Neurological diseases were the most expensive NCD disease group at CHF 9.9 billion, followed by cardiovascular and mental disorders at CHF 9.5 billion each and musculoskeletal diseases at CHF 9.1 billion. Alzheimer's and dementia caused the highest spending among the individual diseases at CHF 6.7 billion.

Health care spending rose by 37% between 2012 and 2022, from CHF 66.6 billion to CHF 91.5 billion, with per capita growth of 25%. Health care spending for NCDs increased by 31%. Among the disease groups, the spending for endocrine, metabolic, blood and immune diseases (+106%), cancer (+55%), and diabetes and kidney disease (+53%) rose at an above-average rate. The spending for CDs rose by 83%, mainly due to COVID-19. The increase in spending was primarily the result of higher expenditure on outpatient services, while nursing home spending was the main driver for neurological diseases.

In 2022, 43% of health care spending was covered by mandatory health insurance (MHI) and the MHI cost sharing of insured persons. The MHI share was 51% for mental disorders, 60% for cardiovascular diseases and 72% for diabetes.

Production losses (indirect costs)

Production losses result from reduced ability to work due to illness. We analysed absenteeism (absence from work), presenteeism (reduced performance at work), disability and premature death. This study calculates these production losses for Switzerland for the first time. Between 2012 and 2022, they increased by 14% to CHF 70.5 billion. Absenteeism grew particularly strongly (+73%), while presenteeism (+5%) and disability and premature death (-2%) remained relatively stable. NCDs accounted for 61% of production losses (CHF 43 billion). The greatest burden was caused by musculoskeletal and mental disorders at 17% each, followed by cardiovascular diseases at 7% and neurological diseases at 6%.

Healthy life years lost (DALYs)

The healthy life years lost are measured in Disability-Adjusted Life Years (DALYs). Between 2012 and 2021 (most recent available year in the GBD study), the burden of disease increased by 8% to 2.4 million DALYs, with the burden of disease per capita falling slightly due to strong population growth. NCDs were responsible for 84% of the disease burden in 2021 (2.0 million DALYs), CDs accounted for 5%. The disease groups with the highest disease burden were cancer (16%), cardiovascular (13%), mental (13%) and musculoskeletal diseases (11%).

While cancer caused the most years of life lost, mental and musculoskeletal diseases, at CHF 21 billion each, led to both high monetary costs and a significant loss of quality of life.

NCDs caused 2.0 million DALYs and thus a high burden of disease in the form of lost quality of life and years of life lost.

Monetary costs of NCDs

The total monetary costs of NCDs (health care spending + production losses) amounted to CHF 109 billion in 2022, which corresponds to around 14% of annual economic output (gross domestic product GDP).

The seven NCDs chronic respiratory diseases, diabetes, cardiovascular diseases, cancer, musculoskeletal diseases, neurological diseases and mental disorders, which are at the centre of national prevention efforts, and obesity caused 52.4% (CHF 48.0 billion) of total health care spending and 55.8% (CHF 39.3 billion) of total production losses in 2022.

Drivers of health care spending

48% of the increase in health care spending between 2012 and 2022 was caused by increased spending per prevalent patient. Other important drivers were population growth at 33% and ageing at 19%. The increase in spending per prevalent patient was the most important driver for most diseases, while prevalence also played a role for mental disorders, diabetes and obesity.

Risk factor overweight and obesity

The health care spending of the risk factors overweight and obesity *as risk factor* rose by 46% to CHF 3.7 billion between 2012 and 2022. As the prevalence of overweight and obesity remained stable over time, this growth is mainly due to the increase in health care spending. The diseases with the highest spending due to overweight and obesity were type 2 diabetes, hypertension and osteoarthritis. Data was only available for some of the diseases for the calculation of production losses. The ascertainable production losses due to overweight and obesity were CHF 2.9 billion in 2022. Overweight and obesity caused 150,000 DALYs or 6% of the total disease burden in 2021. Obesity *as a disease* caused health care spending of CHF 228 million. The production losses and DALYs could not be calculated for obesity *as a disease* because the data are not available.

Risk factor physical inactivity

The health care spending of physical inactivity increased by 9% to CHF 1.7 billion between 2012 and 2022. As the prevalence of physical inactivity has decreased slightly over time, this growth is mainly due

to the increase in health care spending. The diseases with the highest spending due to physical inactivity were dementia, depression and osteoporosis. Data was only available for some of the diseases for the calculation of production losses. The ascertainable production losses due to physical inactivity were CHF 849 million in 2022. Physical inactivity caused 61,000 DALYs or 3% of the total disease burden in 2021.

Conclusion

Health care spending has risen substantially between 2012 and 2022, mainly due to an increase in spending per prevalent patient. NCDs are by far the most expensive disease category. In particular, chronic diseases with a high prevalence such as neurological, mental, cardiovascular and musculoskeletal diseases cause high health care spending. At 9% of GDP, production losses are of a similar order of magnitude to health care spending. They are mainly caused by mental and musculoskeletal disorders. In terms of lost health, cancer and cardiovascular diseases are the main causes of lost years of life, while mental and musculoskeletal diseases are largely responsible for lost quality of life. The risk factors overweight and obesity as well as lack of exercise are responsible for 6% of health care spending and 9% of lost health.