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HEALTH PANORAMA 2020

The most important facts and figures on Switzerland's healthcare system

EDITOR'S NOTICE

39th edition, published by

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The content of the brochure can also be found on the website of Interpharma at **www.interpharma.ch.** Readers are free to download and use the charts in their latest version for their own purposes provided the sources are properly quoted.

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Deutschsprachiges Original verfügbar
Disponible en traduction française

Statistics brochure in a new look

Dear Reader
What do Swiss households spend their money on? What are the healthcare cost trends in Switzerland? Where do Swiss people prefer to buy their medicines and treatments? And how much do pharmaceutical companies invest in research and development in Switzerland?

Questions such as these are addressed by Interpharma's latest statistics publication, now in its 39th year. This year it appears in a new look, bringing together figures both on the healthcare system and on the pharma market and Switzerland's position as a pharma hub.

At www.interpharma.ch, under "publications", you can order further copies of the brochure and other Interpharma publications or download them in PDF format. We hope this collection of the most important facts and figures on Switzerland's healthcare and pharma landscape will serve as a contribution to a fact-based and constructive discussion for the benefit of patients in Switzerland.

We wish you an interesting and informative read.

Dr. René Buholzer

Swiss healthcare system

Life expectancy in Switzerland has **doubled** in the last 100 years.

Of every **100 francs** spent in the healthcare system **12 francs** goes on medicines.

People in Switzerland spend more on **alcohol and tobacco** than they do on **medicines.**

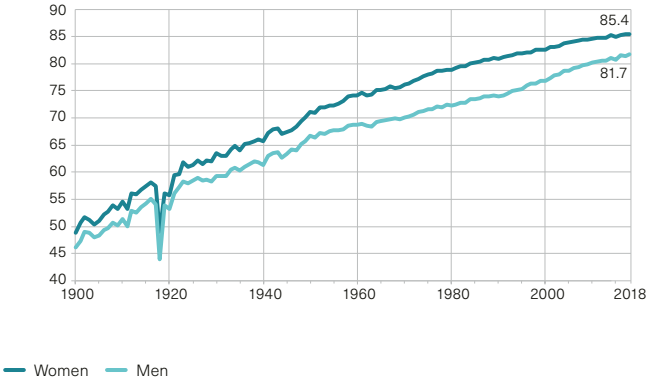
Life expectancy in Switzerland continues to rise

Life expectancy in Switzerland has doubled in the last 100 years.

At the start of the 1990s, life expectancy for women was still about seven years longer than for men – by 2018 the gap had narrowed to almost four years.

Thanks to better healthcare, new and innovative medicines, improved hygiene and a healthier lifestyle, we are not only living longer, but also more healthily.

Mean life expectancy at birth
In years, 1900–2018



Source: Federal Statistical Office (2019), Statistisches Lexikon der Schweiz.

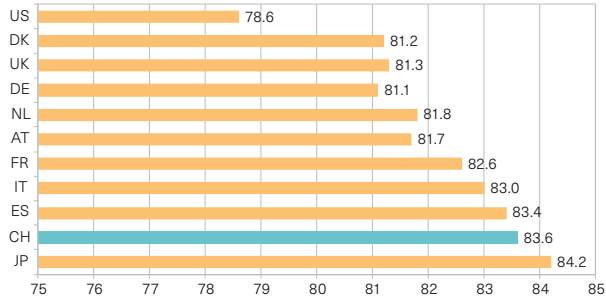
Switzerland has one of the highest life expectancies in the world

At an average of 83.6 years for the general population, Switzerland is one of the world's leading countries for life expectancy.

According to the OECD, only in Japan do people live longer. Mean life expectancy there is 84.2 years.

Switzerland's top ranking is thanks to the high-quality healthcare that is accessible to the whole population and also a high quality of life, among other factors.

Life expectancy for the population as a whole at birth
In years, 2017



Source: OECD (2020), OECD Health Statistics 2017.

Cardiovascular diseases are the most common cause of death in Switzerland

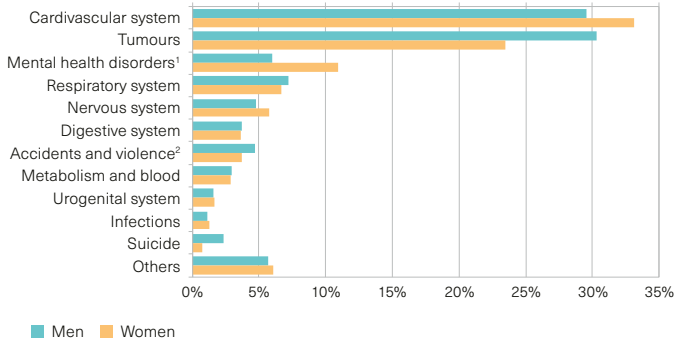
In 2019, 66'971 deaths were registered in Switzerland. In women, cardiovascular diseases were the most common cause of death (33.1%). In men, 29.6% of deaths were attributable to the cardiovascular system.

In 2017, tumours were the most frequent cause of death in men (30.3%), but much less common in women (23.5%).

Deaths attributable to mental health disorders were much rarer in men (6%) than in women (10.9%).

Most common causes of death by gender

Deaths 2017: 66'971



[1] Dementia (excluding Alzheimer's), schizophrenia, dependence on psychotropic substances, affective disorders and other mental health disorders [2] Excluding suicide

Source: Federal Statistical Office (2020), Cause of Death Statistics.

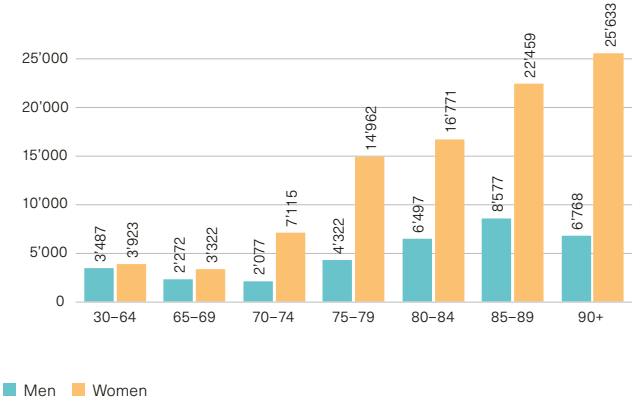
As life expectancy increases, growing numbers of people are suffering from dementia

There were 128'186 people in Switzerland living with Alzheimer's or another form of dementia in 2018. At 94'185, the number of cases in women is much higher than in men (34'001).

Most of the men affected are between 85 and 89; in women, most of those affected are aged over 90.

There is still no successful treatment for Alzheimer's to date. Pharma companies worldwide are engaged in research to find an effective therapy.

Number of dementia patients
Per age group, 2018



Source: Swiss Alzheimer's Association (2020), Demenz in der Schweiz 2019.

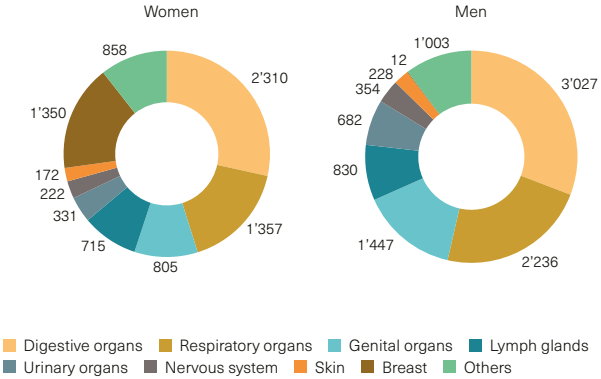
Gender-specific differences in cancer mortality

In 2017, a total of 17'939 people died of cancer. More men died from cancer (9'819) than women (8'120).

Most deaths attributable to cancer, both in men and in women, involve the digestive tract; the second most common cause of death from cancer involves the respiratory organs.

The third most frequent cause of death attributable to cancer is breast cancer in women and cancer of the genital organs in men.

Percentage of deaths by type of tumour
2017



Source: Federal Statistical Office (2020), Cause of Death Statistics.

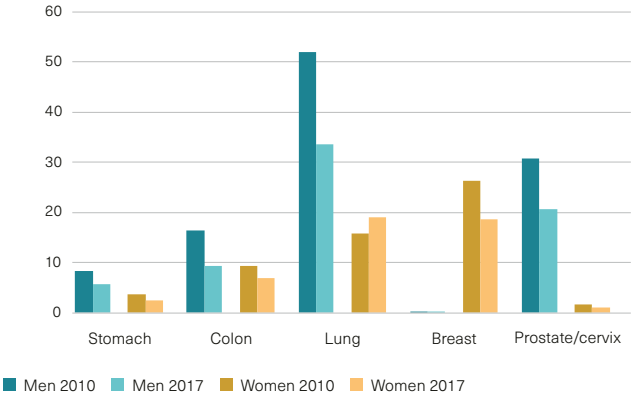
Cancer mortality rates are falling thanks not least to medical advances

The cancer mortality rate fell in both men and women between 2010 and 2017, which is due not least to medical advances and pharma industry research in oncology.

Lung cancer mortality in men fell sharply between 2010 and 2017, whereas it increased slightly in women.

Prevention, early diagnosis and access to modern treatment play a crucial role in cancer.

Development of cancer mortality rate per 100'000 inhabitants
2010 and 2017



Source: Federal Statistical Office (2020), Cause of Death Statistics.

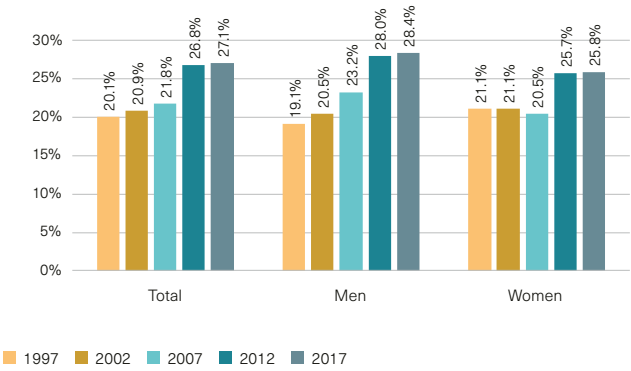
A quarter of Switzerland's population suffers from high blood pressure

Chronic diseases such as hypertension and diabetes are steadily increasing in Switzerland, which is mainly attributable to long-term changes in lifestyle such as a lack of exercise, unbalanced nutrition, excessive alcohol consumption or tobacco consumption.

Today more than 27% of Swiss people have hypertension, whereas in 1997 the proportion was around 20%.

In men, the proportion of those with hypertension has risen sharply from 19.1% in 1997 to 28.4% in 2017. In the case of women, the proportion increased from 21.1% to 25.8% over the same period.

Proportion of Switzerland's population aged over 15 years with hypertension



Source: Federal Statistical Office (2020), Swiss Health Survey.

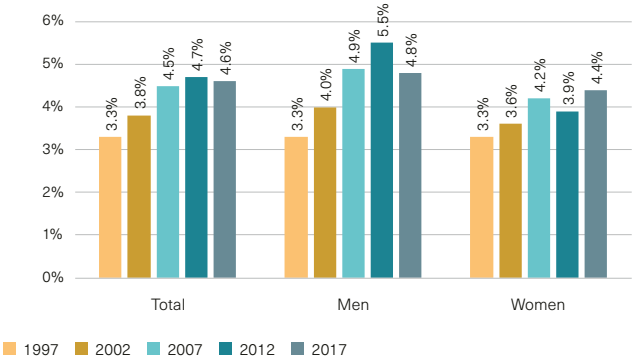
Diabetes affects 4.6 percent of the population

Switzerland's population has seen an increase in the proportion of those aged 15 years or older with diabetes from 3.3% in 1997 to 4.6% in 2017.

Men and women in Switzerland are affected by diabetes to an approximately equal extent: 4.8% of all men and 4.4% of all women suffered from some form of diabetes in 2017.

Diabetes is a metabolic disorder in which the blood sugar concentration is elevated. Inadequate treatment can lead, for example, to kidney damage, amputations or blindness.

Proportion of Switzerland's population aged over 15 years with diabetes[1]



[1] Diabetes Type 1 and Type 2

Source: Federal Statistical Office (2020), Swiss Health Survey.

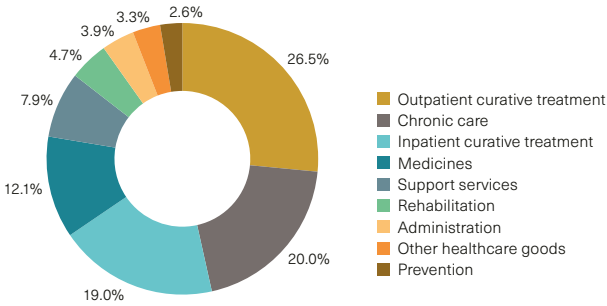
Holistic view of healthcare costs

In 2018, healthcare expenditure in Switzerland amounted to a total of CHF 81.9bn, which was 2.8% up on the previous year.

Outpatient and inpatient curative treatment, together with long-term care, accounted for two thirds of total healthcare costs.

Medicines account for 12.1% of healthcare expenditure at CHF 9.9bn. In other words, for every 100 francs spent on healthcare, 12 francs go on medicines.

Breakdown of healthcare costs by services provided
Total costs in 2018: CHF 81'892m



Source: Federal Statistical Office (2020), Kosten und Finanzierung des Gesundheitswesens.

Healthcare costs in the last 8 years have risen on average by 3.4 percent a year

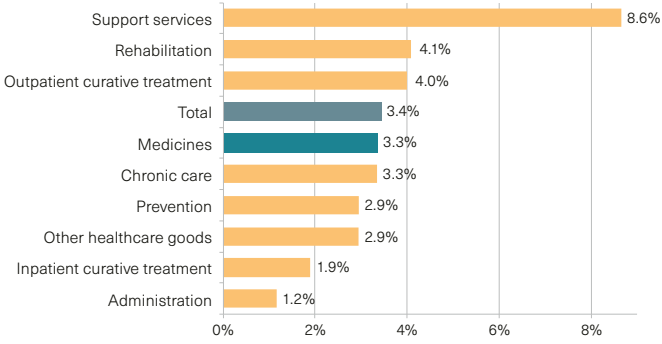
Over the period from 2010 to 2018, total healthcare costs rose by 3.4% per year. The biggest growth was seen in the cost of support services (e.g. public services, laboratory analysis) with an increase of 8.6% per year.

With a growth of 3.3%, the increase in spending on medicines was slightly below the average.

When the growth of inpatient (+1.9%) and outpatient (+4.0%) curative treatment is viewed separately, a picture emerges of a shift away from inpatient to outpatient treatments.

Cost development according to services provided

2010–2018, average annual growth in costs



Source: Federal Statistical Office (2020), Kosten und Finanzierung des Gesundheitswesens.

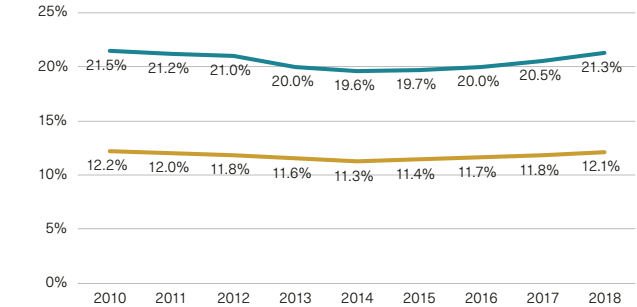
The cost of medicines as a proportion of healthcare costs is stable

In 2018, medicines accounted for 12.1% of healthcare costs and 21.3% of the costs incurred under the compulsory basic health insurance.

The cost of medicines as a proportion of healthcare and compulsory basic health insurance costs has been stable for years, even as high-price innovative medicines have emerged onto the market.

Since around three quarters of medicines are financed through the health insurance, unlike other service categories (e.g. inpatient curative treatment), they account for a higher proportion of health insurance costs than they do of total healthcare costs.

Cost of medicines as a proportion of healthcare and basic health insurance costs



Source: Federal Statistical Office (2020), Kosten und Finanzierung des Gesundheitswesens.

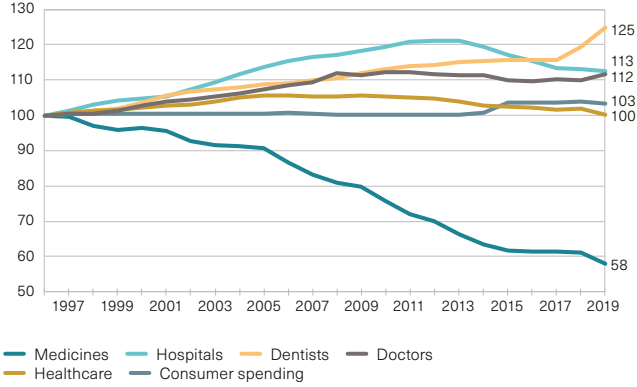
Since the introduction of the Health Insurance Act (HInsA) the price index for medicines has fallen by 40 percent

The price index for medicines is the only price index in the healthcare system that has continually fallen since the enactment of the HInsA in 1996.

At 58 points, the price index in 2019 was more than 40% lower than in 1996, whereas the hospital price index, for example, was around 12% higher in 2019 than in 1996.

The prices of reimbursable medicines are reviewed every three years and reduced where necessary, which leads to major savings in the healthcare system.

Price indexes in Switzerland's healthcare system



Indexed: 1996 = 100

Source: Federal Statistical Office (2020), National Consumer Price Index.

The cost of disease from a societal perspective

The burden of disease is primarily felt by those afflicted with the disease. But others are often affected as well: For the health insurer, medical treatment costs are incurred; for the employer, productivity losses are incurred; and the social environment of the patient also bears the consequences of a disease.

A distinction can be drawn between direct costs (medical and non-medical treatment costs), indirect costs (lost resources) and intangible costs (reduced quality of life), sum of which corresponds to the cost of a disease to society.

Composition of overall costs of a disease
Illustration

Direct costs
Medical and non-medical costs of treatment

Indirect costs
Lost resources, especially work time for patients and relatives

Intangible costs
Reduced quality of life, especially due to pain and suffering

Source: Polynomics (2020), Gesellschaftliche Betrachtung der Krankheitskosten.

Impact of therapeutic innovations on healthcare costs

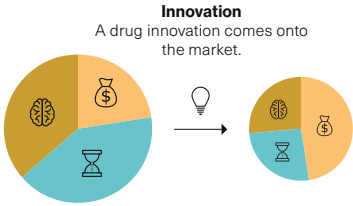
Innovative medicines are a form of treatment innovation and can have an impact on all three cost categories.

In general, direct treatment costs rise with an innovation, whereas indirect and intangible costs fall.

From an overall economic perspective, it is particularly interesting to know whether the innovative treatment leads to a fall in the total cost of the disease. The question of how the make-up of the overall costs develop is secondary.

Disease costs from a societal perspective

Impact of innovation; illustration



Starting point
- Current standard therapy involves relatively low direct costs.
- Indirect costs are relatively high.
- Intangible costs are relatively high.
- The overall costs of the disease are high (size of pie).

New situation with innovation
- Spending on the drug innovation increases direct costs.
- Indirect costs can be reduced.
- Intangible costs can be reduced.
- The overall costs of the disease fall.

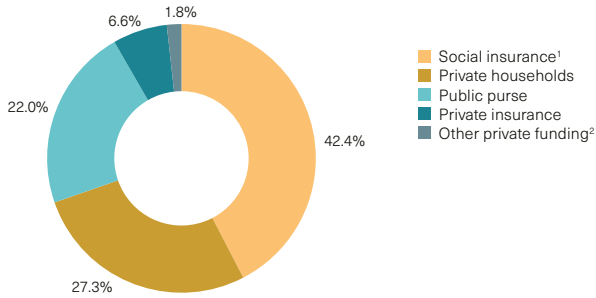
Source: Polynomics (2020), Gesellschaftliche Betrachtung der Krankheitskosten.

More than 40 percent of healthcare costs covered by social insurance

Of the healthcare costs incurred in 2018, amounting to CHF 81.9bn, 42.4% was covered by social insurance schemes. Federal, cantonal and municipal authorities covered 22% of healthcare costs in 2018.

In the present system, 100% of outpatient care is covered by health insurers, while in the case of inpatient care 55% is covered by health insurers and 45% by the cantons. EFAS (the proposed bill for unified financing of outpatient and inpatient services) calls for this system to be abolished and funding to be unified so as to reduce disincentives in the system.

Funding regime of the healthcare system
Total costs 2018: CHF 81'892m



[1] Including compulsory basic health insurance
[2] Foundations etc.

Source: Federal Statistical Office (2020), Kosten und Finanzierung des Gesundheitswesens.

Private households directly finance 64 percent of healthcare costs

Private households finance 64% of healthcare costs; they pay the largest share of this in contributions to social insurance (30.4%). They pay more than a quarter directly for services that are not covered by the health insurers (out-of-pocket payments).

Around 30% of healthcare costs are financed by the public purse. These costs are likewise covered by private households to a substantial extent in the form of taxes.

In addition to levies in the form of taxes, companies also play a part, covering 6.3% of healthcare costs.

Funding sources of healthcare system
Total costs 2018: CHF 81'892m

Public purse	29.7%	CHF 24'310m
Private households	64.0%	CHF 52'423m
Out of pocket[1]	27.3%	CHF 22'350m
Social insurance	30.4%	CHF 24'874m
Private insurance	5.2%	CHF 4'260m
Others[2]	1.1%	CHF 938m
Companies	6.3%	CHF 5'159m

[1] Expenditure not covered by insurance (excess, spending up to franchise)
[2] Donations, legacies

Source: Federal Statistical Office (2020), Kosten und Finanzierung des Gesundheitswesens.

Swiss households spend comparatively little on medicines

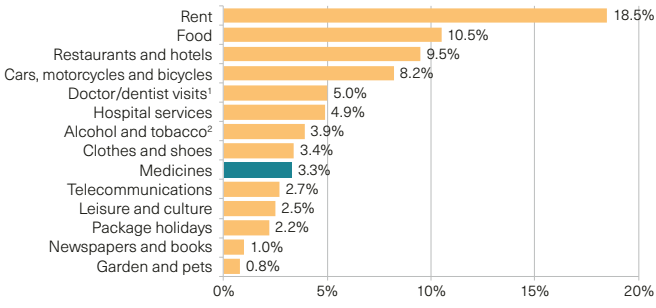
Almost one fifth of household spending goes on rent, making rent by far the biggest expenditure item of private households.

Swiss households also spend 10.5% of their budget on food, 9.5% on restaurant meals and hotel stays and 8.2% on cars, motorcycles and bicycles.

People in Switzerland overall spend more of their disposable income on alcohol and tobacco (3.9%) than on medicines (3.3%).

Expenditure structure of Swiss households

Basket of goods in national consumer price index, 2020



[1] Outpatient services (excluding hospital outpatients), excluding medicines
[2] Incl. alcohol in restaurants and hotels (+1.1%)

Source: Federal Statistical Office (2020), National Consumer Price Index.

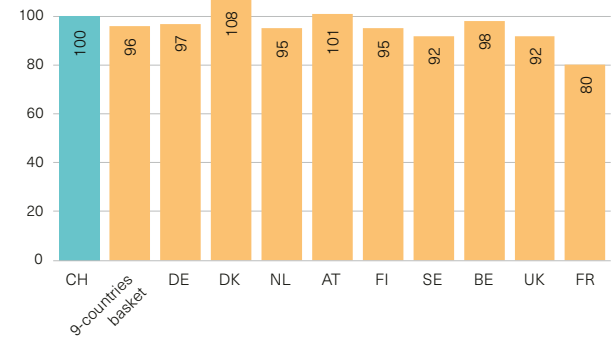
Original medicines 4.5 percent more expensive than in other countries

In April 2020, the 250 or so biggest-selling patent-protected original products were 4.5% more expensive in Switzerland than the average of the nine reference countries.

Compared with the previous year, the price difference has narrowed partly as a result of the price reviews of the Federal Office of Public Health (FOPH), leading to savings of more than a billion francs since 2012.

Drug prices in Switzerland are thus only slightly higher than abroad, whereas other consumer goods in Switzerland are much more expensive than those in the reference countries, e.g. cars, cosmetic products and hotel stays.

Top 250 original products, basket of 9 countries
Exchange rate CHF/EUR: 1.15*, prices of April 2020



Source: santésuisse and Interpharma (August 2020), Gemeinsamer Auslandpreisvergleich.

* Exchange rate applied by the FOPH when reviewing

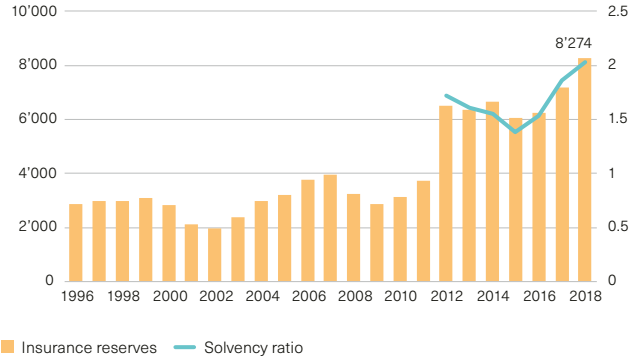
Reserves in the basic health insurance continue to rise year-on-year

Reserves in the compulsory basic health insurance reached a new record high in 2018 at more than CHF 8.2bn.

The solvency ratio determines the factor by which the reserves exceed the legal minimum. A value of 2 means that the reserves are twice as high as the minimum level.

In 2018, the reserves of health insurers corresponded approximately to the payments for three insurance months.

Reserves of compulsory basic health insurances, 1996–2018
Solvency ratio, 2012–2018



Left axis: reserves in CHF millions; right axis: solvency ratio

Source: Federal Office of Public Health (2020), Statistics on compulsory health insurance.

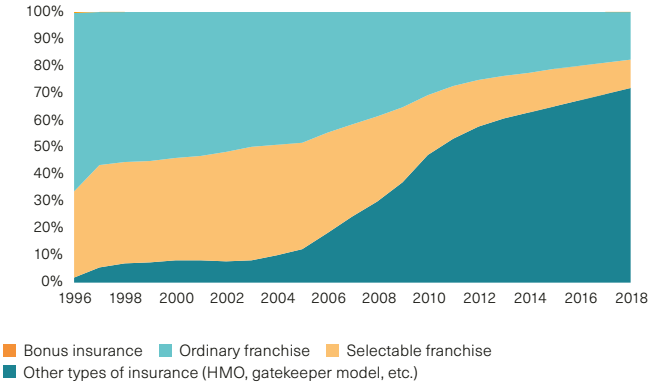
More and more people are opting for an alternative insurance model

Alternative insurance models, such as the HMO and gatekeeper model, especially since 2006, have seen strong growth.

Overall, it is clear that the insurance model with an ordinary franchise has steadily decreased in the period up to 2018. Only one in four people still uses such a model.

Insurance models with a range of franchises to choose from make up the smallest proportion today along with the model with bonus insurance.

Types of insurance in the Compulsory Basic Insurance scheme
1996–2018, types of insurance over time



Source: Federal Office of Public Health (2020), Statistics on compulsory health insurance.

Pharmaceuticals market

Around **⅔** of all medicine packs are bought in pharmacies.

In the case of a medicine priced at **100 francs, 68** goes to the producer and **32** to the trade, to doctors, pharmacists and, through value-added tax, to the federal government.

Since 2012 more than **1 billion francs** have been saved through price reviews of medicines.

Price cuts dampen growth of the pharma market

In 2019, the pharmaceuticals market in Switzerland achieved a volume of CHF 6.136bn at ex-factory prices (+2.8% year-on-year).

In the same year, sales of patent-protected medicines declined (–1.2% compared with 2018).

The number of packs sold stagnated at around 187 million.

Market volume 2019: CHF 6'136.5m

At ex-factory prices

2019		
Sales outlet	**At ex-factory prices**	**In packs**
Pharmacies	CHF 2'962.2m (–0.1%)[1]	121.4m (–0.1%)
SD doctors[2]	CHF 1'551.9m (+5.4%)	42.5m (+1.6%)
Hospitals	CHF 1'561.8m (+6.0%)	16.8m (–1.1%)
Chemists/drugstores	CHF 60.7m (+0.5%)	6.3m (–1.0%)
Total	CHF 6'136.5m (+2.8%)	186.8m (+0.1%)

[1] Comparison with previous year
[2] Doctors with own in-practice pharmacy are defined as self-dispensing doctors (SD doctors).

Source: IQVIA (2020).

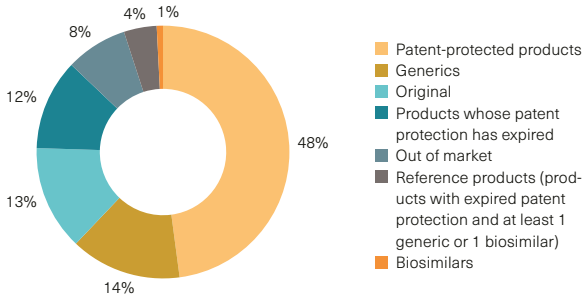
Patent-protected products continue to make up the bulk of the pharma market

Patent-protected medicines account for the largest share of the Swiss pharma market at 48%.

The generics-eligible market, comprising off-patent products, originals and generics, account for 39% of the market.

In 2019, the sales of generics exceeded those of original products for the first time.

Composition of the pharmaceutical market
2019



Source: IQVIA (2020), Pharma Market Switzerland.

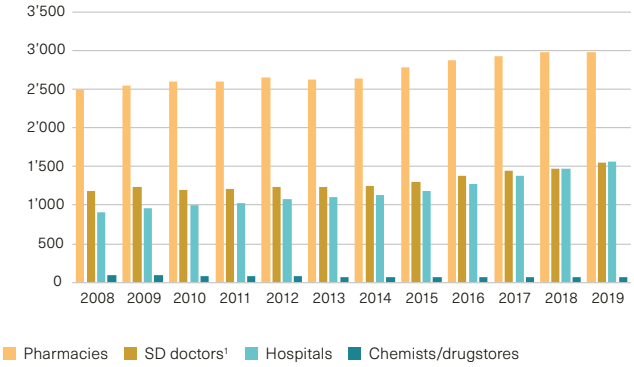
Pharmacies remain the most important sales outlet for medicines

Pharmacies are still the most important sales outlet for pharmaceuticals: 65% of all packs are sold through pharmacies. In terms of value, these sales account for around 48% of total sales.

Self-dispensing doctors and hospitals each account for around a quarter of pharma sales in terms of value.

Chemists or drugstores account for only a small percentage of pharma sales at 1% in terms of value.

Sales outlets by sales generated
In CHF millions, at ex-factory prices, 2008–2019



[1] Doctors with own in-practice pharmacy are defined as self-dispensing doctors (SD doctors).

Source: IQVIA (2020).

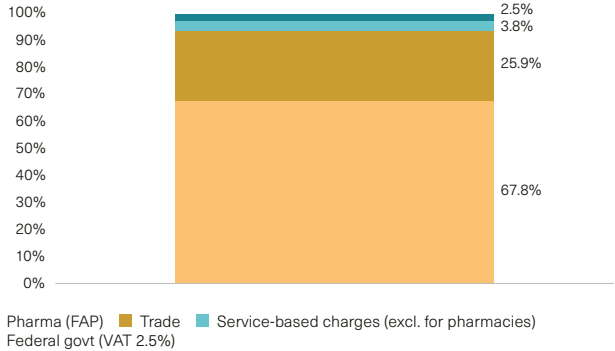
The price of a medicine is made up of various components

At 68%, the largest component in the price of a medicine is the ex-factory price, which the producer receives for research, development and production.

Along with the ex-factory price, there is the trade price to be considered. This consists of a price-related and a pack-related surcharge. Additional price components are the service-based charge for pharmacies and value-added tax.

For a medicine priced at 100 francs, 68 goes to the producer and 32 to the trade, to doctors, pharmacists and, through value-added tax, to the federal government.

Composition of drug price
2017



The trade includes both a price-related surcharge in % of the ex-factory price (FAP) and a pack-related surcharge in CHF depending on the level of the FAP.

Source: santésuisse and Interpharma (2018), Gemeinsamer Auslandpreisvergleich.

Market for reimbursable medicines (+3.0%) shows slightly stronger growth than market as a whole (+2.8%)

In 2019, out of the total sales for pharmaceuticals at ex-factory prices (EFP), the share of sales achieved by reimbursable medicines amounted to around CHF 5'188m (+3% over 2018).

Measured by total sales for pharmaceuticals this corresponds to a share of around 84.5% (EFP).

A medicine is reimbursable if the FOPH approves its reimbursement under the health insurance. For this the FOPH assesses the efficacy, suitability and cost-effectiveness of the medicine and then sets its maximum reimbursement price. All reimbursable medicines are included in the Specialities List (SL) of the FOPH.

Market of reimbursable medicines in Switzerland
2019

Sales outlet	At ex-factory prices	In packs
Pharmacies	CHF 2'428.3m (+0.1%)[1]	CHF 75.0m (+0.9%)
SD doctors[2]	CHF 1'380.9m (+4.4%)	CHF 38.5m (+1.7%)
Hospitals	CHF 1'376.2m (+7.2%)	CHF 13.3m (–1.3%)
Chemists/drugstores	CHF 2.9m (–2.2%)	CHF 0.7m (–6.2%)
Total	CHF 5'188.3m (+3.0%)	CHF 127.5m (+0.9%)

[1] Compared with previous year
[2] Doctors with own in-practice pharmacy are defined as self-dispensing doctors (SD doctors).

Source: IQVIA (2020).

Several elements drive the development of the pharma market

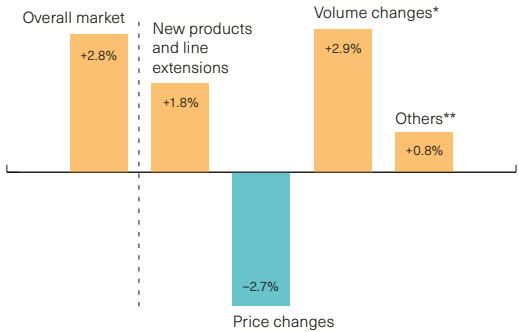
The pharma market in Switzerland grew by 2.8% in 2019. This growth was driven mainly by the volume of medicines sold (+2.9%).

New products – e.g. for cancer or autoimmune diseases – have likewise contributed to this growth. There are ever more medicines for hitherto untreatable diseases.

The triennial price reviews by the FOPH have led to a 2.7% decline in the overall market. With these savings, the pharmaceutical industry is making a major contribution to help contain the growth of costs in the healthcare system.

Development of individual components at ex-factory prices

Growth in 2019



* Volume changes: percentage of revenue growth resulting from increased sales of products launched on the market before 2019. ** Interactive effects: caused by simultaneous interactions of price and volume changes. Residual effects: change in existing strengths from smaller to larger packs or vice versa.

Source: IQVIA (2020), Pharma Market Switzerland.

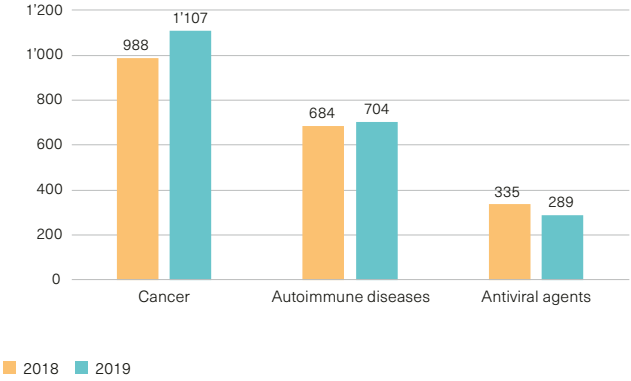
Many new therapies for cancer and autoimmune diseases

Ever more treatments for cancer and autoimmune diseases increase the chances of a cure for patients.

The strongest growth in terms of value was seen with cancer medicines (+12.1% compared with 2018) – this is mainly due to the launch of innovative new therapies.

Antiviral products recorded negative growth compared with 2018 (–14%).

Total market, cumulative therapy areas
In CHF millions, at ex-factory price



Source: IQVIA (2020), Pharma Market Switzerland.

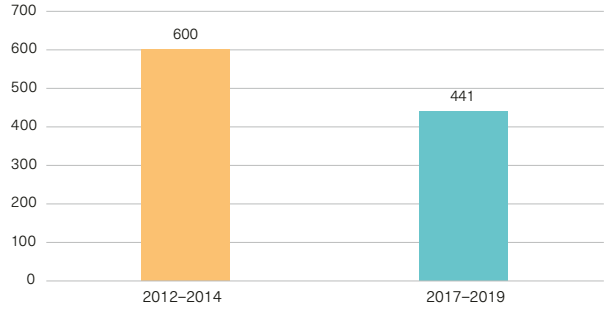
Major savings in the healthcare system thanks to drug price reductions

The FOPH reviews reimbursable medicines for their efficacy, suitability and cost-effectiveness every three years and also when indications are widened and, in the case of fixed-term inclusion in the SL, when this term expires.

Only downward price adjustments are possible as a rule.

Medicines are the only sector in the healthcare system that contributes to savings on a regular, institutionalized basis. More than CHF 1bn has been saved on medicines since 2012; the savings between 2017 and 2019 alone ran to CHF 441m.

Total savings through price reductions
In CHF millions



Source: Federal Office of Public Health (2019), Press releases 25.10.2019, 21.08.2019, 02.11.2018, 22.03.2018, 22.12.2017.

Since 2005, the generics market has almost tripled in value

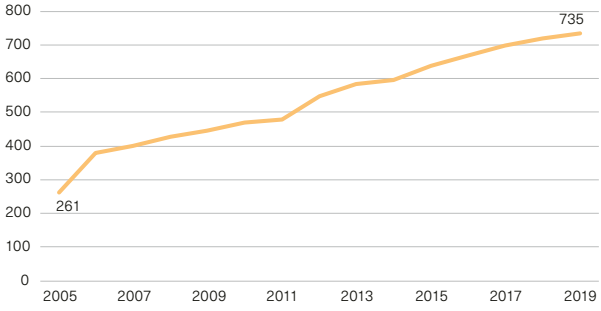
Reimbursable generics achieved a value of around 735 million francs in 2019.

In the generics-eligible market, the proportion of generics has been stable for years. This market includes not only generics themselves, but also off-patent originals from which generics exist.

In addition, however, there are also originals of which there are no generic versions because, among other factors, their prices are already so low that they are not economically attractive for generics producers.

Generics market

Reimbursable, in CHF millions, at ex-factory prices, 2005–2019



Source: IQVIA (2020).

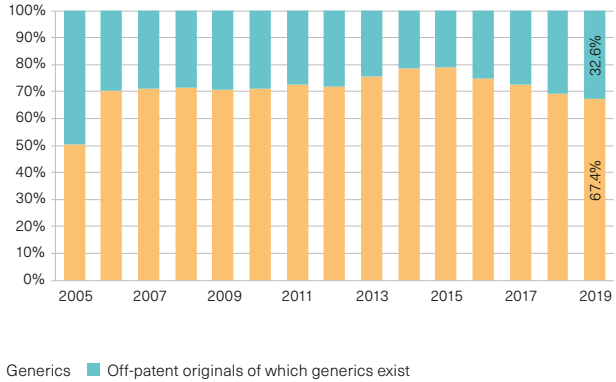
High level of substitution with strongest-selling generics

In the case of the 20 biggest-selling off-patent active substances, generics accounted for around 68% of sales volume in 2019.

More than two thirds of units sold (tablets, capsules etc.) were thus generics.

In 2005, the proportion was still 50% – at that time, only one in two units of off-patent active substances sold was a generic.

Generics-eligible active ingredients, top 20
Generics as percentage share of the generics-eligible market



Source: IQVIA (2020).

Putting patients at the center

Millions of patients are pinning their hopes on the **6’100** new active agents under development in 2019.

The cure rate for hepatitis C has **more than doubled** in the last 20 years thanks to innovative medicines.

Worldwide there are **6’000 to 8’000** rare diseases and **162** approved medicines to treat them.

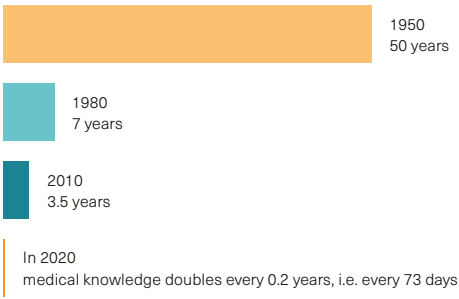
Better health thanks to medical advances

The past 70 years have seen rapid growth in medical advances. While it took 50 years for medical knowledge to double back in 1950, it takes only 73 days in 2020.

Medical progress has led to many new treatment options, such as gene therapy, cell therapy and CAR-T therapy.

Investments in medical progress remain necessary. There are still many diseases that can only be treated partially, if at all, such as cancer and Alzheimer's.

Growth of medical knowledge



Source: Densen, Peter (2011). Challenges and Opportunities Facing Medical Education, American Clinical and Climatological Association, 122, p. 48–58.

The value of innovative therapies accrues at several levels

The value of innovative therapies can be seen on three levels. The direct value accrues to the patient, who benefits from a more rapid recovery, the chance of a cure or a better quality of life.

Society as a whole benefits from innovations, because better treatment leads to lower costs thanks to shorter healing processes and patients can return to work sooner.

Ultimately the economy also benefits, because new and internationally successful medicines allow reinvestments in research and development. This leads to the creation of important jobs, generates value added and brings higher tax revenues for the state.

Overall consideration of the benefits

Direct benefit to the patient
- Higher life expectancy
- Faster recovery
- Chance of a cure
- Better quality of life
- Reduced emotional burden

Benefits to society
- Lower costs through shorter healing process
- Quicker return to work
- Reduced nursing costs
- Effects on other social institutions (unemployment insurance, disability insurance)

Benefits to the economy
- Jobs
- R&D investments
- Contribution to gross value added
- Taxes

Source: Interpharma (2020).

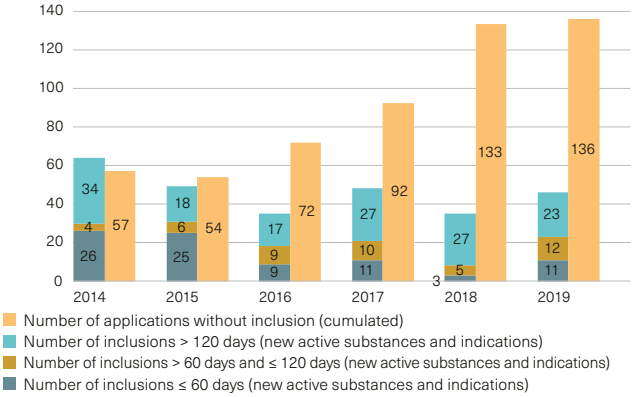
Access to innovations in Switzerland comes with a delay

As at end of 2019, a total of 136 applications for approval had not yet led to inclusion in the Specialities List (SL). Since 2015, there has been a sharp increase in the number of approved but not yet reimbursed medicines.

In 2019, only 11 of 46 products (24%) were included in the SL within the 60 days laid down in the ordinance.

For 50% of all products (23 of 46) it took more than 120 days to be included in the SL in 2019.

Interval between Swissmedic approval and inclusion in SL, along with cumulated non-inclusions, in days, 2014–2019



Source: Swissmedic (2014–2019), Specialities List, calculations by Interpharma.

The cure rate for hepatitis C has more than doubled

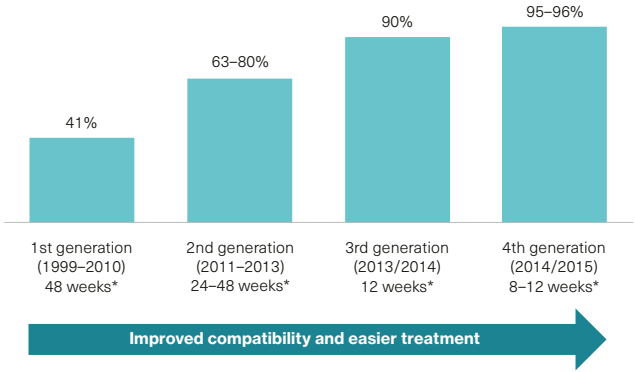
The cure rate for hepatitis C has more than doubled from about 40% with the 1st generation of medicines to more than 95% with the 4th generation.

With the new oral combination therapy, the duration of treatment at 8 to 12 weeks is less than a quarter of the original duration of treatment.

Medical progress has led not only to a simpler treatment for patients, but also to a better tolerability of the medication.

Chronology of hepatitis C treatment

1999–2015, cure rate



Source: PhRMA (2017), Prescription Medicines: International Costs in Context.

* Treatment duration

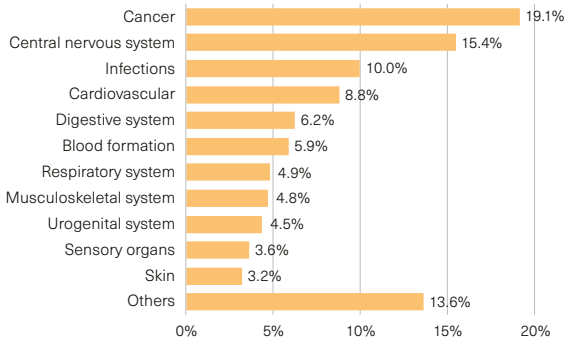
Many new forms of therapy for cancer

Cancer patients are benefiting from many new forms of treatment: since 2018, the market share of cancer therapies has risen by around three percentage points and amounted to 19.1% of the entire market in 2019.

Medicines for diseases of the central nervous system – which includes analgesics, medicines for disorders such as epilepsy and also treatments of mental disorders – were the second most frequently sold medicines in 2019.

With a market share of around 10%, infectious diseases were a further important indication area in 2019. Treatments here include e.g. medicines for hepatitis C, HIV and antibiotics, as well as vaccines.

Market share of medicines by indication area
Market volume 2019: CHF 6'136.5m, at ex-factory prices



Source: IQVIA (2020).

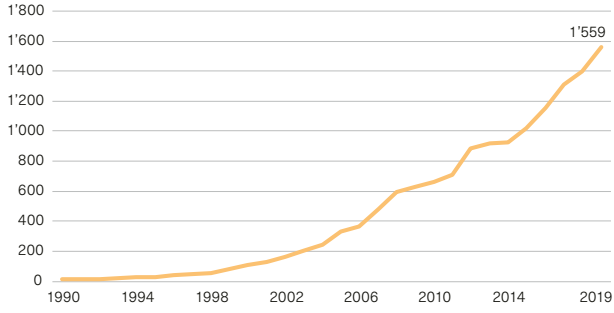
The proportion of innovative biotech and gene technology products is growing rapidly

Many innovative medicines are produced in genetically modified organisms using biotechnological methods. Unlike with classical chemical substances, these are mostly complex, high-molecular-weight proteins.

The proportion of medicines produced using biotechnology or gene technology has grown steadily since the 1990s, which is good news for patients because innovative medicines promise new treatment options in many areas. In 2019, they accounted for around a quarter of the market as a whole.

30% of gene technology products are used to treat cancers.

Market for biotech and gene technology products
In CHF millions, at ex-factory prices[1], 1990–2019



Source: IQVIA (2020).

[1] As from 2015 new calculation of gene technology products

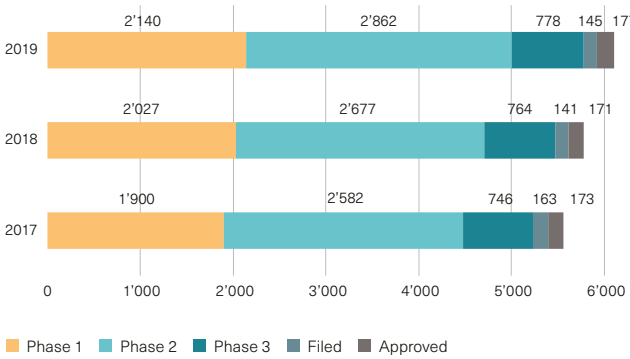
Well-stocked pipelines give hope to millions of patients

In 2019, a total of 6'100 active agents were in various stages of development. Compared with the previous year, the number of products in development were up by 5.6%.

The steady growth of new products reflects not only medical progress, but also the fact that pharma companies reinvest a lot in research and development.

Cancer therapies are a particular focus of research on new medicines, but new treatment options are also being constantly sought for infectious diseases, diseases of the central nervous system and respiratory disorders.

Number of active agents in development stages close to marketing authorization, 2017–2019



21 largest pharma companies worldwide (Interpharma members excl. Allergan, Lundbeck, UCB and Vifor)

Source: Ernst & Young (2020), Die grössten Pharmafirmen weltweit: Analyse der wichtigsten Finanzkennzahlen der Geschäftsjahre 2017, 2018 und 2019.

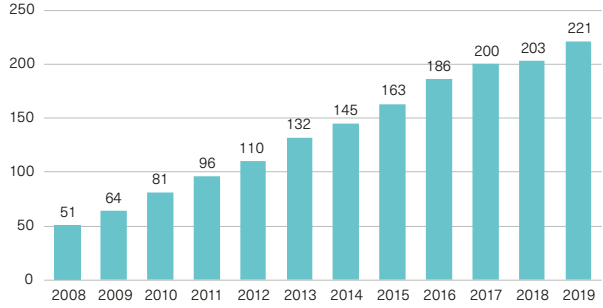
Ever more medicines for rare diseases

A disease is considered rare when it affects fewer than 5 out of 10'000 people. Since there are known to be 6'000 to 8'000 such diseases, the entirety of rare diseases can be likened to a widespread disease.

The number of indications with orphan drug status is continuously rising, because many pharma companies are engaged in research on rare diseases.

In 2019, there were 162 approved medicines with orphan drug status. These are used for example in rare diseases of the immune or nervous system, rare metabolic disorders and also rare forms of cancer.

Number of indications with orphan drug status
Total: 162 medicines with orphan drug status, 2019



Source: Swissmedic (2020), Human medicines with orphan drug status.

Leader in research and development

Only **1 of 10’000** substances in development make it to the market as a medicine.

For every franc earned in sales in Switzerland, Interpharma members reinvest almost **twice as much** at CHF 7 million in research and development in Switzerland.

At almost **1’000** patent applications per million inhabitants Switzerland files **more than twice as many patents** with the European Patent Office as second-placed Sweden.

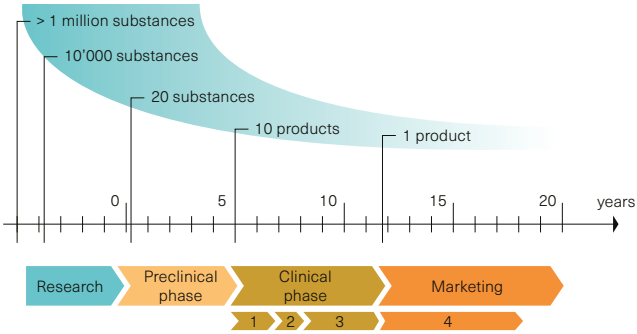
The long path from laboratory to patient

Pharma research is a high-risk undertaking: the development of a medicine takes 12 years on average, and the risk of failure is 90%.

Often unsatisfactory effects or serious side effects are only identified during expensive clinical trials.

Out of 10'000 substances, 20 make it into the preclinical phase. Of these 20 substances from the preclinical phase, 10 make it into the clinical phase. Of these 10, only one reaches the market as a finished product.

Steps in the development of a medicine



Source: Interpharma (2020).

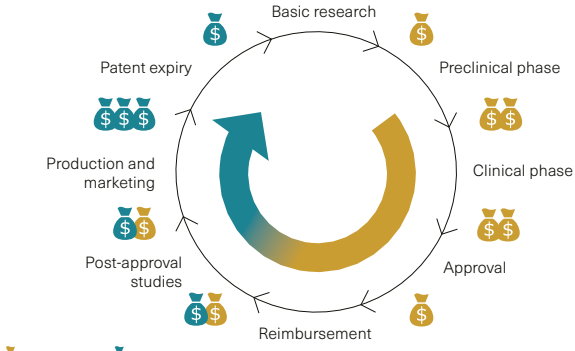
Patent protection allows reinvestments in new medicines

Many development stages and administrative hurdles have to be overcome before a medicine is ready for the market. This process is associated with high costs.

Patent protection often begins already in the early phases of development. So the validity of a patent is often well advanced even before a medicine reaches the market.

Not until the decision on reimbursement is made do medicines begin to generate income for the companies. This income must be high enough for the companies to recoup sufficient funds for research into new medicines.

Research cycle
Illustration



Outer circle: research cycle, inner circle: patent expiry

Source: Interpharma (2020).

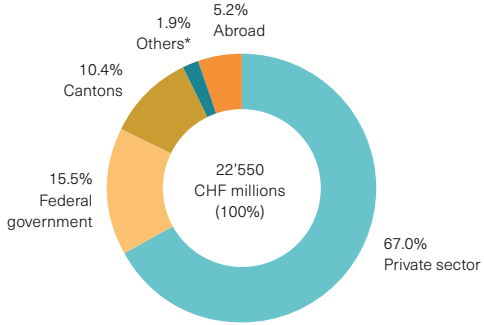
The private sector finances most of the research and development carried out in Switzerland

In 2017, a total of CHF 22.6bn was invested in research in Switzerland.

Of these investments, 67% came from the private sector. The pharma sector was the most important investor, accounting for almost 40% of private-sector research expenditure.

The public purse plays a part at both federal (15.5%) and cantonal level (10.4%), accounting in total for 25.9% of expenditure on research and development.

Total research and development expenditure
2017



* Private non-profit organizations without own funds of universities

Source: Federal Statistical Office (2019), Finanzierung der in der Schweiz durchgeführten Forschung und Entwicklung (F+E) nach Finanzierungsquelle 2017.

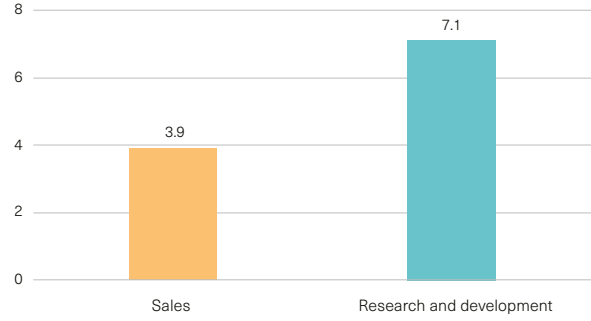
Switzerland as a strong research hub thanks to globally successful pharma industry

In 2019, Interpharma companies throughout Switzerland achieved sales of CHF 3.9bn and invested CHF 7.1bn in research and development in Switzerland.

For every franc earned in Switzerland, therefore, almost twice as much is ploughed back into research in Switzerland.

These high levels of investment in Switzerland as a research hub are only possible because of the successful international operations of Swiss pharmaceutical companies.

Interpharma companies in Switzerland: sales and research
In CHF billions, 2019



Source: Interpharma (2020).

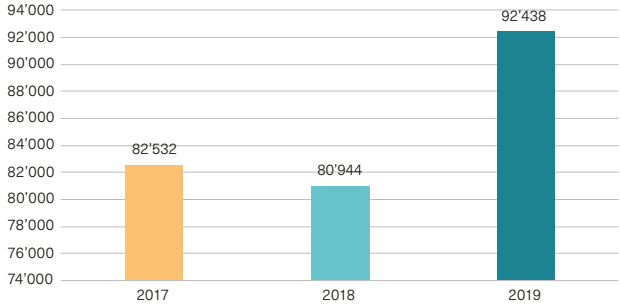
Pharma companies worldwide invest more than 90 billion euros in the research and development of new medicines

In 2019, the world's 21 largest pharma companies invested around 92 billion euros in research and development.

This is a 14.2% increase in research expenditure over the previous year.

Along with the US, Switzerland is one of the countries with the highest research and development expenditure in the pharma sector worldwide.

Expenditure on research and development
In EUR millions



21 largest pharma companies worldwide (Interpharma members excl. Allergan, Lundbeck, UCB and Vifor)

Source: Ernst & Young (2020), Die grössten Pharmafirmen weltweit: Analyse der wichtigsten Finanzkennzahlen der Geschäftsjahre 2017, 2018 und 2019.

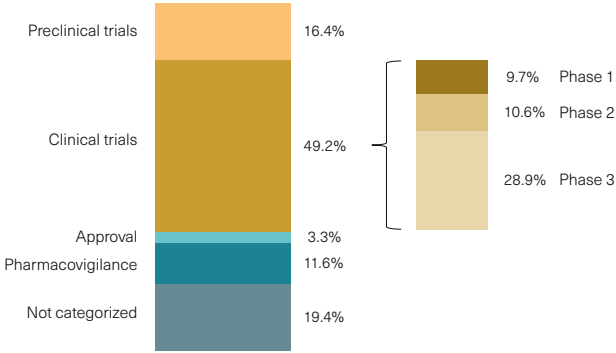
Half of research expenditure goes on clinical trials

50% of research spending goes on clinical trials. In phase 1 to 3 trials, the efficacy and safety of the medicines are tested in humans.

Before medicines can be tested in humans, they undergo pre-clinical testing for efficacy and safety in animals. These tests are required by law to protect humans from undesirable side effects.

The aim of pharmacovigilance is to identify, assess and understand adverse effects following market launch so that appropriate action can be taken to minimize risks.

Distribution of research expenditure by operations
2018



Source: PhRMA (2019), Annual Membership, survey 2019.

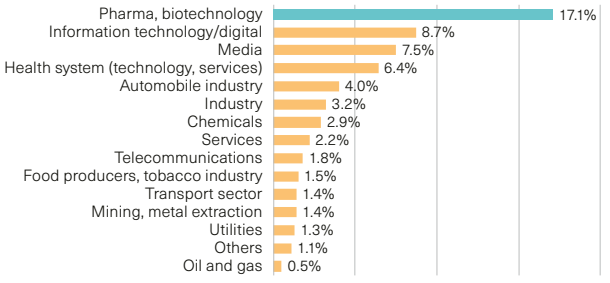
Pharma industry investments in research and development above average

Research intensity indicates what percentage of sales flows back into research and development.

The pharma and biotech sector invests around 17% of sales directly back into the research and development of new products. This is far higher than in any other sector.

Further innovative sectors such as information technology/ digital (8.7%) and the automobile industry (4.0%) show a much lower research intensity in this comparison of sectors.

Average research and development intensity
2018



Source: Ernst & Young (2019), Top 500 F&E: Wer investiert am meisten in Innovationen?

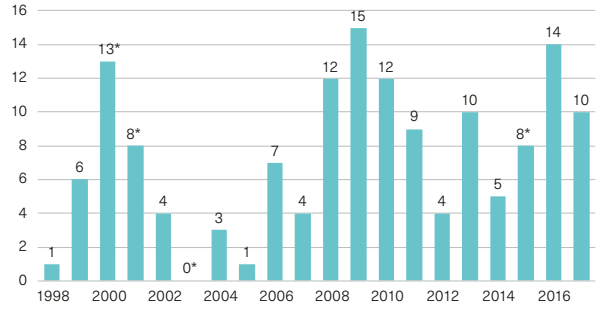
Low success rate makes the development of medicines cost-intensive

Only a few medicines make it to market. Pharma companies run a high risk of loss in the development of a new medicine.

Between 1998 and 2017, there were 146 unsuccessful attempts to develop a medicine for Alzheimer's. Over the same period, only four new medicines were approved for Alzheimer's.

With the success of a medicine, a company must also be able to finance research into medicines that prove unsuccessful. If this cross-subsidization is no longer possible, research into new medicines will come to an end.

Unsuccessful Alzheimer's medicines in development compared with new approvals*, 1998–2017



Source: PhRMA (2018), Researching Alzheimer's Medicines.

* 1 new authorisation

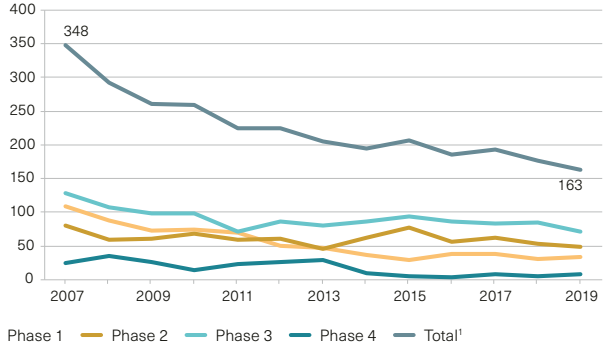
Clinical trials allow patients to gain early access to innovative medicines

Switzerland has a long tradition in clinical research and has outstanding university clinics. In 2019, 163 clinical trials were conducted in Switzerland.

But the framework conditions in Switzerland are not ideal for clinical research. This is reflected in a declining number of clinical trials.

By meeting statutory time limits and introducing fast-track procedures for trials of innovative therapies, this trend can be broken.

Clinical drug trials definitively approved by Swissmedic
2007–2019



[1] The total may differ from the sum of Phases 1–3, as Phase 0 studies and case studies are not included because of their small number.

Source: Swissmedic (2020).

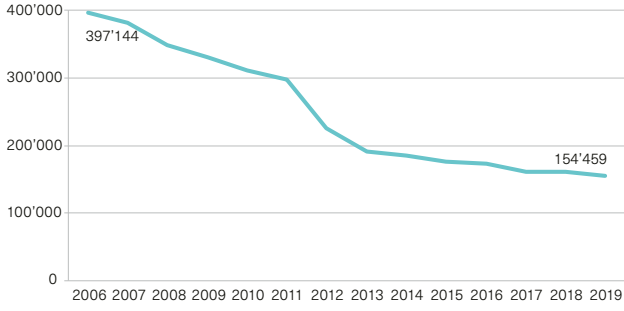
Number of animal experiments in the industry has been declining for years

With the 3Rs principles, many animal experiments should be replaced, the number of laboratory animals reduced and constraints be kept to a minimum (refined).

The number of animal experiments in the industry has been reduced from almost 400'000 (2006) to around 154'000 (2019) thanks to the consistent application of the 3Rs.

To ensure that medicines are effective and safe in humans, research with animals is essential for the development of new medicines. Animal experiments are only carried out in Switzerland if no alternatives are available.

Number of laboratory animals in the industry in Switzerland
2006–2019



Source: Federal Food Safety and Veterinary Office (FSVO) (2020), Animal experiment statistics.

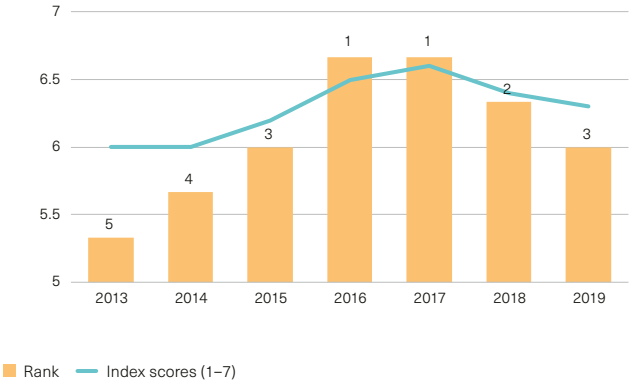
Research and development require good protection of intellectual property

The process involved in the research and development of a new medicine is time-consuming and expensive. Reliable protection of intellectual property is required to ensure that companies are able to bear this risk.

Switzerland is one of the leading countries in the world when it comes to the protection of intellectual property. Compared with 2017, however, Switzerland has fallen back two places in the international ranking.

For a country whose success rests on innovations in particular, world-leading protection of intellectual property is essential.

Intellectual property subindices from the Global Competitiveness Report, 2013–2019



Source: World Economic Forum (2019), Global Competitiveness Reports 2013–2019.

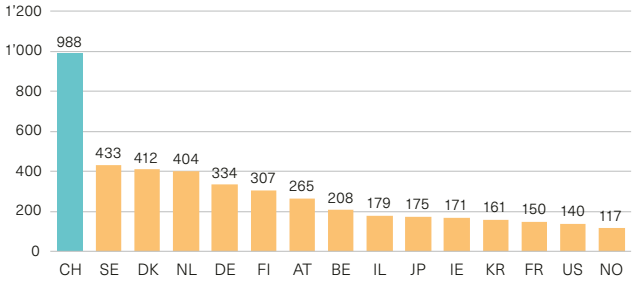
Switzerland leads in the filing of patent applications

In 2019, Swiss companies filed 8'249 patent applications. In relation to the size of the population, that is an absolute top figure at almost 1'000 patent applications per million inhabitants.

In the international ranking, second-placed Sweden arrives at a figure of 433 patent applications per million inhabitants, followed by Denmark in third place with 412.

For the pharma industry, patents are an essential prerequisite to ensure they can continue reinvesting money in research and development.

Patent applications
Per million inhabitants, 2019



Source: European Patent Office (2020), Patent Index 2019.

Strong economic policy framework

On the innovation index, Switzerland is in **1st place,** but when it comes to competitiveness it is ranked only **5th.**

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58 percent of employees in the pharma sector have a university degree; in the rest of industry the proportion is 30 percent of all employees.

Around **40 percent** of all Swiss exports come from the pharma sector, almost half of which go to the EU.

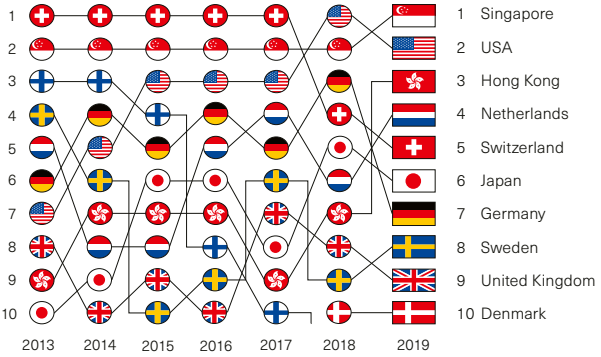
Switzerland has lost its top place in competitiveness

After Switzerland was leading in terms of competitiveness for many years, it has now fallen to fifth place in the 2019 international ranking.

Optimal framework conditions are essential for a successful and competitive business location.

The attractiveness of Switzerland is under pressure from many sides: political moves hostile to business, looming erosion of the bilateral agreements with the EU and rising costs of bureaucracy and regulation are putting the competitiveness of the country at risk.

Global Competitiveness Index
2013–2019



Source: World Economic Forum (2019), Insight Report.

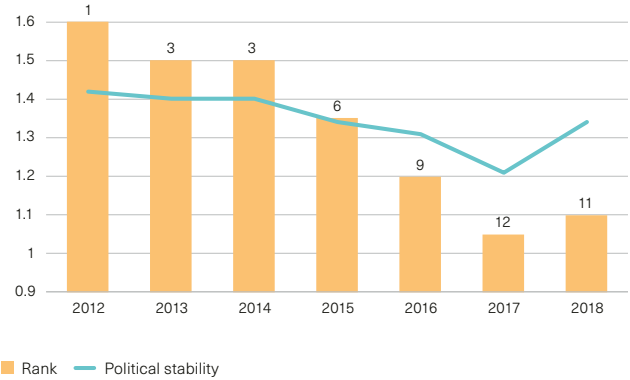
Investments in research and development require planning and legal certainty

Political stability and legal certainty are traditionally important strengths of Switzerland as a business location. In recent years, however, Switzerland has lost ground to other countries.

Innovative sectors with a long investment horizon are particularly dependent on planning and legal certainty.

For new companies settling in a country or investments in a location, political stability is an important decision-making factor in the choice of location.

Political Stability Index
2012–2018



Source: Worldbank Data (2020), Worldwide Governance Indicators.

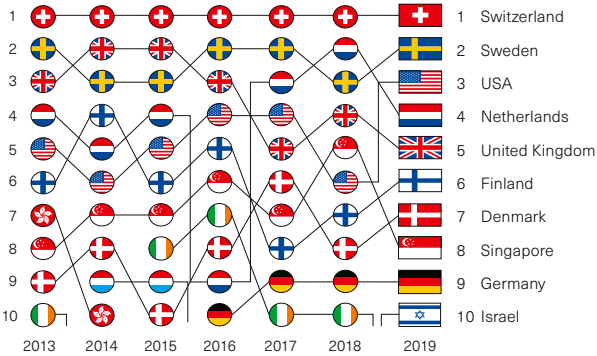
Switzerland is the most innovative country in the world

According to the Global Innovation Index, Switzerland has been the most innovative country in the world for years. In 2019, second place was taken by Sweden, followed in third place by the US.

Switzerland performs especially well in the creation of knowledge and in creativity. There is potential for improvement in the removal of administrative obstacles for start-ups.

As a country poor in natural resources, Switzerland is dependent on innovation-friendly framework conditions. Only in this way can Switzerland continue to prevail in future international competition.

Global Innovation Index
2013–2019



Source: WIPO et al. (2019), Global Innovation Index 2019.

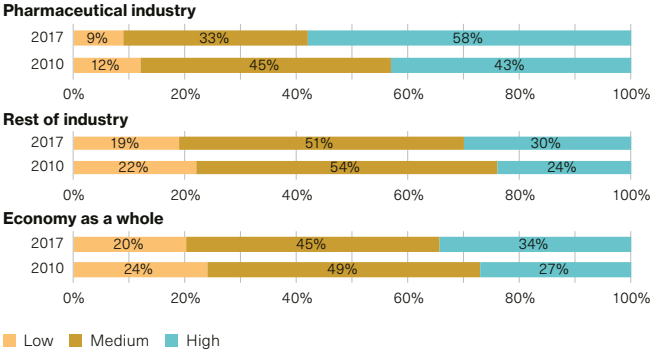
Swiss economy dependent on highly qualified people

In 2017, the proportion of employees with a university degree in Switzerland stood at 34% overall. There has been a steady increase in the demand for highly qualified personnel since 2010.

The pharma industry is characterized by a very high and well above-average research intensity. 58% of employees in the pharma industry have a university degree.

The Swiss labour market is too small to meet the high demand for a highly qualified workforce. This means that access to foreign workers is of utmost importance.

Qualification structure
2010, 2017



The qualification level is measured on the basis of educational attainment (low = secondary level 1, medium = secondary level 2, high = tertiary level).

Source: BAK Economics (2019), The Importance of the Pharmaceutical Industry for Switzerland.

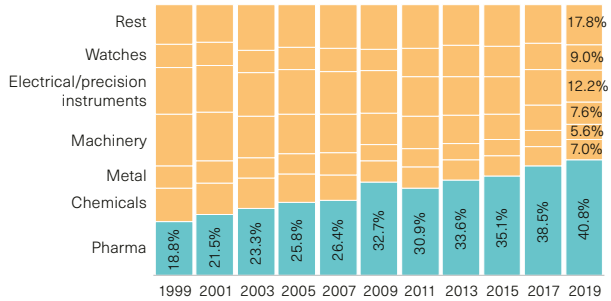
The pharma sector is Switzerland's most important export industry

With exports worth CHF 97.6bn, accounting for almost 41% of all exports, the pharmaceuticals sector is Switzerland's most important export industry.

In the last 20 years the pharma sector has more than doubled its share of the country's exports from less than 20%.

Other important export industries are the MEM sector, the watchmaking industry and the chemicals sector. Together they account likewise for around 41% of exports.

Nominal exports in selected industries as percentage of total exports, 1999–2019



Source: BAK Economics (2020).

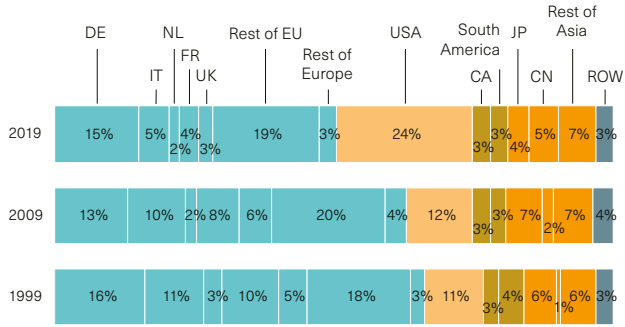
Europe is the most important market for Switzerland's pharma industry

In 2019, around 48% of Switzerland's pharma exports went to the European Union. This makes the EU the most important market for pharmaceutical products.

The US accounts for 24% of exports, making it the single most important country. In the last 20 years, exports to the US have more than doubled from 11% to 24%.

Around 15% of exports go to Asia, the biggest export markets here being China (5%) and Japan (4%).

Development of pharma exports
By destination; 1999, 2009, 2019



Source: BAK Economics (2020).

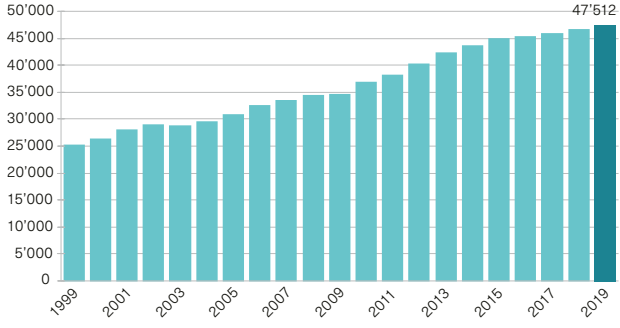
Steady increase in the number of employees in the pharma sector over 20 years

Since 1999, the number of employees in the pharma industry overall has increased by around 22'200 to 47'500 employees.

With this growth in the number of employees over the last two decades, the relevance of pharmaceutical companies for the jobs market has also increased. Around one out of every 15 jobs in industry is provided by the pharma sector.

The pharma industry has since seen a slowing of the employment dynamics, but it is still above the average for the economy as a whole.

Number of people employed in the pharma industry
In persons, 1999–2019



Source: BAK Economics (2020).

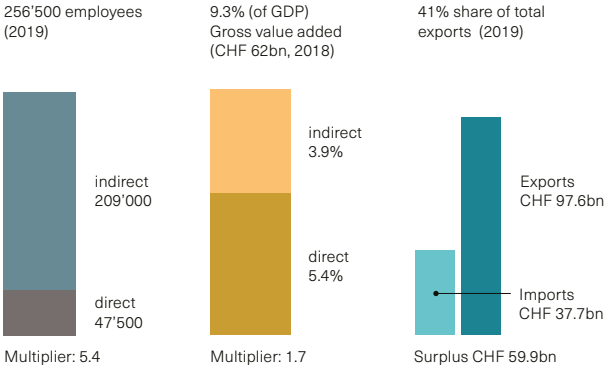
The pharma sector is the engine of Switzerland's economy

In 2019, the pharma sector employed 47'500 people in Switzerland. In its operations, the industry also buys in services and products such as machinery, chemical substances, cleaning and security personnel, insurance services and energy, thereby providing for an additional 209'000 jobs in other sectors.

5.4% of Switzerland's gross value added is generated by the pharma sector. This rises to 9.3% when indirect effects are taken into account.

The trade surplus of the pharma sector amounts to CHF 59.9bn, making the pharma industry the driving force behind Switzerland's position as an industry hub.

Employees, gross value added and share of total exports of the pharmaceutical industry



Source: BAK Economics (2019/2020), The Importance of the Pharmaceutical Industry for Switzerland.

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