



Swiss Healthcare and Pharmaceutical Market

Editor's notice

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2018

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Public Health

The Swiss healthcare system

Governance of the health system

Switzerland is characterized by a highly federalist structure with its federal government, cantons and communes or municipalities, which are each responsible for different functions. The principle of subsidiarity also plays an important role, according to which public services that can be provided at a given political level should not be undertaken at a higher level or instance. Consequently, the federal level is comparatively lean.

Responsibility for the provision and funding of healthcare lies mainly with the 26 cantons, also in fields that are regulated by the federal government. Therefore, the federal state's competencies are limited. The cantons maintain and, together with the mandatory health insurance, co-finance hospitals and nursing homes, which they also supervise. Most hospitals are owned or controlled by cantons and municipalities. The cantons secure healthcare by means of hospital planning, emergency and rescue services. Together with the federal government and local municipalities, they are responsible for prevention and the promotion of health. The cantons also monitor licensing for medical and paramedical professions and finance the training of doctors through the cantonal universities. Furthermore, they assess and adjust premium reductions for economically vulnerable persons. At cantonal level, the cantons can autonomously implement and enforce the laws and ordinances enacted by the federal government. The federal provisions are partly supplemented by cantonal implementation laws. The cantons have autonomy in the implementation and enforcement of the law. Responsibility for this implementation lies

with the health ministers, who are members of the cantonal executive. The health ministers of all the cantons together form the Swiss Conference of the Cantonal Ministers of Public Health (GDK) that promotes cooperation and common policies between cantons. However, it is not a deliberative body but largely a forum that seeks to facilitate consensus building. The conference and the Health Minister at federal level regularly meet within the framework of the permanent platform of the Swiss National Policy Dialogue for Health and discuss health policy issues.

At federal level, the Federal Council (the executive) and Parliament (the legislative) draw up and enact laws and ordinances that are later to be implemented by the cantons. Together with the latter, the Federal Office of Public Health (FOPH), which is attached to the Federal Department of Home Affairs (FDHA), is responsible for the development of national health policy. The responsibilities of the FOPH also cover, for example, the supervision of mandatory health insurance and decisions on the reimbursement and the prices of medicines. The control and monitoring of epidemics and infectious diseases as well as the monitoring of research in humans also fall within its remit. A further function of the FOPH lies in the area of prevention and efforts to combat addiction. It also regulates university medical and healthcare professions, and it represents the health policy interests of Switzerland on international bodies and vis-à-vis other states.

The 2,300 or so municipalities implement responsibilities delegated by cantons, e.g. the provision of nursing and home care (Spitex). They do this either alone or – depending on their size – in conjunction with other municipalities. They are also partially involved in federal and cantonal prevention activities.

Financing healthcare

In Switzerland, mandatory health insurance, the basic social insurance, is regulated by the Health Insurance Act (LAMal), which came into force in 1996. The basic principle consists in guaranteeing that all persons resident in Switzerland have access to good medical care. In the event of an illness, the basic health insurance ensures that the cost of medical treatment is covered. Since 1996 everyone living in Switzerland has been required to conclude a basic health insurance. Everyone is individually insured and is free to choose his or her health insurer from around 60 privately organized health insurers that offer basic insurance coverage. The health insurers have to accept everyone regardless of health and age. Monthly per capita premiums are payable for all persons. The level of the premium depends on where the person lives and also differs from one health insurer to another, but within these differences the level is the same for each age group and for both sexes. The premiums are also not dependent on income. The insured persons pay all their premiums themselves. There are no employer contributions. Economically vulnerable people can request a premium reduction, which is paid by the Federation and the canton in which they live. Besides the basic health insurance, cantons co-finance hospital and nursing home costs. These two payers account for the majority of healthcare expenditure, but also out-of-pocket costs – either through cost-sharing or directly from a person, e.g. for non-reimbursed medicines – contribute significantly to the health system. All services (incl. medicines) included in the catalogue of benefits are fully covered by the mandatory health insurance and are subject to a co-insurance of 10% with an annual cap.

The catalogue of benefits covered by the mandatory insurance is quite extensive by comparison with other countries: The insurance covers most outpatient and inpatient procedures, maternity benefits and those medicines that the FOPH includes in the so-called Specialties List (SL). Procedures and methods used in complementary medicine are also covered to some extent. The insurers may offer different models (HMO, Managed Care, etc.). Insured persons have a wide choice at their disposal with regard to the deductible and have the option every year of changing their health insurer or the insurance model or deductible within their insurance. Supplementary health insurance plans also exist. They can be concluded on a voluntary basis and cover benefits that are not covered by the mandatory insurance. Since the benefits catalogue of mandatory health insurance is very comprehensive, however, supplementary health insurance plans primarily cover benefits regarding greater freedom, for example in the choice of doctor or hospital or certain methods used in complementary medicine. Top-up insurance of this kind is usually offered by insurers that also offer mandatory insurance.

Delivering health services

The Swiss healthcare system allows patients to see a specialist directly (free choice of doctor). But normally the family doctor or general practitioner (GP) is the first point of contact when there are medical problems. If the GP cannot treat the disease, the patient is referred to a specialist and/or a hospital. Specialists work both in their own private practices and also in hospitals. In most cantons, both are allowed to dispense medicines themselves from their own practice-based pharmacy. In other cantons, prescription medicines can only be obtained in pharmacies on medical prescription.

Since 2012, all patients in Switzerland have been free to choose their hospital. The hospitals are financed both by the cantons and by the mandatory health insurance. By comparison with other countries, the separation of hospitals into an inpatient and an outpatient section occupies a special position. In the outpatient section treatments are fully covered by the mandatory insurance. In the case of inpatient hospital treatments, however, at most 45% of costs are covered by the mandatory insurance and at least 55% by the cantons. Since 2012 these treatments are financed via case-based payments according to diagnosis-related groups (DRG) that also include the cost of medicines as well as diagnostic and therapeutic services, unless otherwise negotiated. Most hospital doctors and health professionals are salaried, whereas GPs and specialist doctors working in ambulatory care settings are paid on a fee-for-service basis.

Approval of medicines

Since Switzerland is not a member of the European Union, it has its own drug regulatory authority and is not affiliated to the European Medicines Agency (EMA). The Swiss agency Swissmedic is responsible for the approval of new medicines and for monitoring of the pharmaceutical market in Switzerland. Swissmedic works closely with foreign agencies. Medicines are not automatically covered by the mandatory insurance once marketing authorization has been granted. Before reimbursement is possible, pharmaceutical companies first have to apply to the FOPH for inclusion in the SL and to provide evidence that the medicines are effective, suitable and efficient. Prices are determined by means of therapeutic referencing and a comparison with prices in other countries. Once medicines have been included in the SL, prices are reviewed every three years. For non-reimbursed medicines, companies are free to price their medicines as they wish.

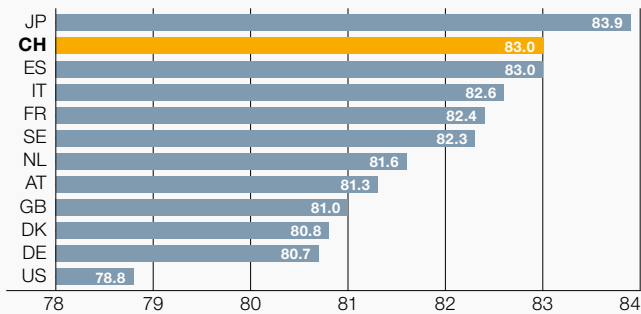
Very high life expectancy in Switzerland

Switzerland has one of the highest life expectancy rates in the world at 83.0 years. Of the OECD countries, only Japan enjoys an even higher life expectancy.

The average life expectancy of a newborn infant in Switzerland has steadily increased since the beginning of the last century. It is thanks to improved hygiene, a higher standard of living and good-quality healthcare that we have seen such a marked increase. In 2016 life expectancy at birth stood at 85.3 years for women and 81.5 years for men. The difference between female and male life expectancy that widened in the second half of the 20th century has narrowed in the last few years. At the beginning of the 1990s, life expectancy for women was still above seven years longer than for men. After this, male life expectancy rose more steeply than female life expectancy, resulting in a narrower difference between the sexes. In 2016 this difference was less than four years.

Life expectancy compared with other countries

Life expectancy of total population at birth (in years), 2015

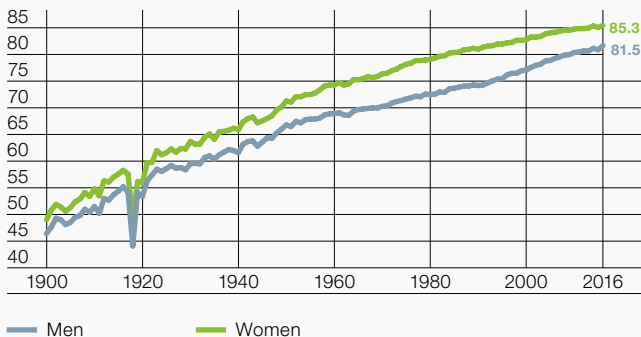


Source: OECD Health Data 2017.

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Mean life expectancy at birth

In years



Source: Swiss Statistical Encyclopedia, Federal Statistical Office, 2017.

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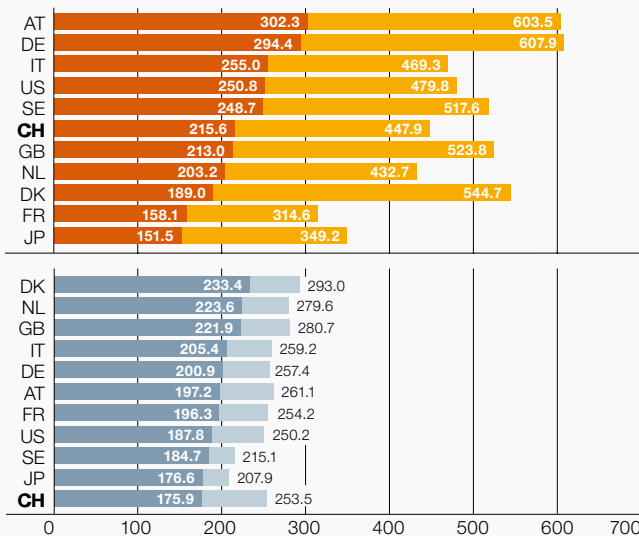
Most common causes of death: diseases of the circulatory system and cancer

Diseases of the circulatory system (ischemic heart disease, cerebrovascular diseases, etc.) are the most common cause of death in Switzerland, followed by cancer. In some comparative countries, such as Denmark, the Netherlands, France and Japan, the exact reverse is the case. In 2015, almost 216 of 100,000 people in Switzerland died of a disease of the circulatory system. This mortality rate is less than half what it was in 1990. In the other comparative countries, similar levels of decline have been reported. This is due amongst other things to innovative medicines and a healthier lifestyle.

In the case of cancer, the number of deaths has likewise fallen in the last twenty years, albeit less sharply than in the case of cardio-vascular disease. In 2015, nearly 176 of 100,000 people in Switzerland died of cancer. In 1990, there were over 30% more deaths from cancer. This marked decrease is the biggest reduction seen in all the comparative countries. The reason for the decrease is to be found in better, modern and innovative treatment options and – in many types of cancer – early diagnosis of disease, which increase the chances of a cure.

The two main causes of death

Deaths per 100,000 population (standardized rates),
2015 or nearest year available



■ Diseases of the circulatory system 2015 ■ Cancer 2015
■ Diseases of the circulatory system 1990 ■ Cancer 1990

Source: OECD Health Data 2017.

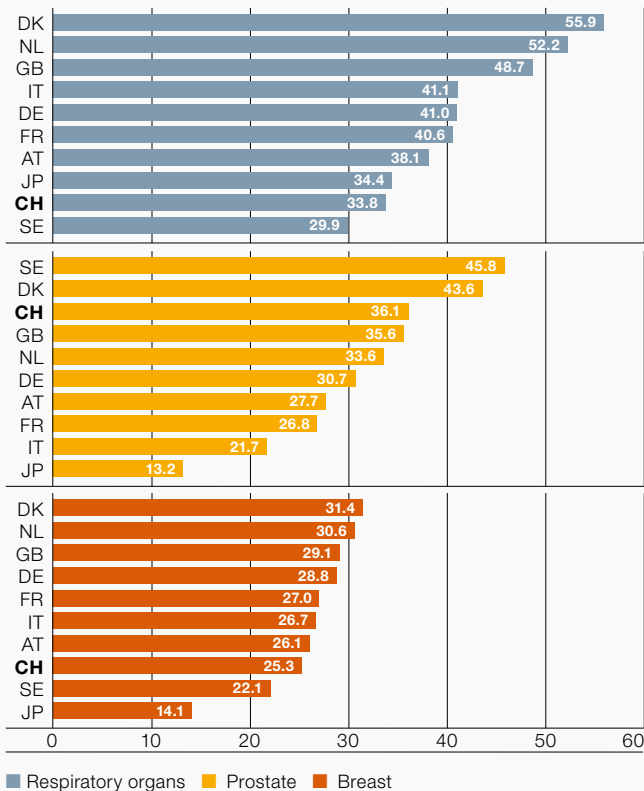
Cancer as second most common cause of death

In Switzerland, cancer is the second most common cause of death. The mortality rate varies from one type of cancer to another. Internationally there are considerable differences in cancer mortality, both overall and also between different types of cancer. On the one hand, this may be related to the prevailing living conditions that either favour or tend to prevent certain types of cancer. On the other hand, however, prevention, early diagnosis and access to modern treatment, such as antibody therapies, also play an important role.

Marked differences in mortality are apparent over time. In breast cancer, for example, the mortality rate in 1990 stood at 44.8 of 100,000 women. It had thus decreased by nearly 44% in 2015. In the framework of early detection programmes for breast cancer, the costs of mammography screening in Switzerland has been covered by health insurers since 2009, provided the investigation is carried out as part of a programme with quality assurance and in women with an increased risk for breast cancer in the family history. Until now, mammography programmes have been introduced in Cantons Basel-Stadt, Fribourg, Geneva, Graubünden, Jura (including the Bernese Jura), Neuchâtel, St. Gallen, Ticino, Thurgau, Vaud and Valais. In all other cantons mammography screening is done in consultation with the doctor.

Deaths caused by cancer

Deaths per 100,000 population (standardized rates)¹,
2015 or nearest year available



Source: OECD Health Data 2017.

¹ In prostate and breast cancer the rates refer to 100,000 men and women respectively.

Differences in access to innovative cancer treatments

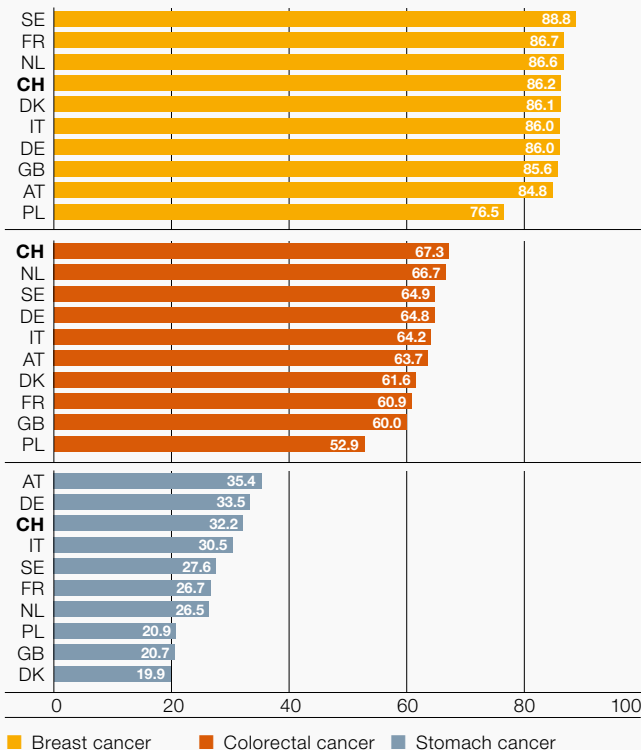
Thanks to new diagnostic opportunities and medicines such as modern antibody treatments, cancer in many cases today can be diagnosed earlier, treated better or even cured altogether.

In Europe, there are substantial differences in access to new cancer treatments and in waiting times for new medicines. This has an impact on the survival rate of cancer patients, because prompt access to new treatment options and medicines is important for the success of treatment in cancer. Thus, the 5-year net survival rate is much higher for many types of cancer in Switzerland than it is in other European countries. These rates are lower particularly in East European countries such as Poland.

The 5-year net survival rate indicates the cumulative probability of surviving up to a given time since diagnosis (eg. 5 years) after correcting for other causes of death because a certain mortality is also to be expected among people without cancer. A value of 100% means that a person will be alive 5 years after the initial diagnosis. A rate of 67.3% as in the case of colorectal cancer in Switzerland is thus to be understood as showing that more than two-thirds of people with colorectal cancer will survive 5 years after diagnosis. The likelihood of people with colorectal cancer not being alive 5 years after diagnosis is therefore nearly 33%.

Comparison of cancer survival rates in Europe

Relative 5-year survival rates (in %), 2010–2014



Source: Global surveillance of trends in cancer survival 2000–14 (CONCORD-3): analysis of individual records for 37,513,025 patients diagnosed with one of 18 cancers from 322 population-based registries in 71 countries, Claudia Allemani et al., *The Lancet Oncology*, Volume 391, 2018: 1023–1075.

Healthcare industry as a major employer

In Switzerland, more than 435,000 people work in the healthcare industry, including the pharmaceutical sector. This is around one in twelve of the working population. Overall, Switzerland has a well-equipped healthcare system, although there are regional differences in the healthcare provided. For example, certain rural regions suffer from a shortage of doctors, while in the urban centres there tends to be a surfeit of general practitioners and specialists. There is also a very high density of small hospitals, which offer little specialization and a wide range of medical services.

By comparison with other countries, there are differences in the structure of medical care. Switzerland has a relatively low density of general practitioners compared with neighbouring countries: for every million inhabitants in Switzerland there are only 1,143 general practitioners, whereas there are far more in Austria, France and Germany. Since doctors are also allowed to dispense medicines directly in many cantons of Switzerland, the density of pharmacies is comparatively low.

Resources in health service

Per million inhabitants, 2016 (or next available year)

	AT	CH	DE	FR	IT	GB	US
General medical practitioner	1,645	1,143	1,704	1,580	923	782	307
Specialist medical practitioner	2,731	2,499	2,434	1,877	3,124	2,017	2,275
Practicing dentists	569	505	855	665	792	530	–
Hospitals	32	35	38	48	19	–	18
Practicing pharmacists	703	541	645	1,082	1,117	859	–

Source: OECD Health Data 2017, conversion in relation to population by Interpharma.

Medicines as a proportion of healthcare costs: 12.7%

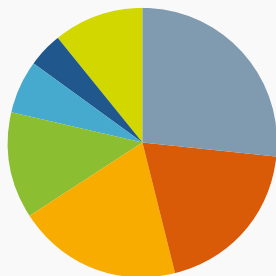
While Switzerland has one of the most expensive healthcare systems in the world, it also offers high-quality outcomes. The cost of the healthcare system has increased by 4.1% compared with 2014 and amounted to around 77.8 billion Swiss francs in 2015. The cost increase was thus higher than in the previous year, when the growth amounted to 3.0%. Healthcare costs in 2015 also grew more strongly than economic output: its share of gross domestic product rose from 11.5% in 2014 to 11.9% in 2015. The cost of medicines as a proportion of healthcare costs rose from 12.6% in 2014 to 12.7%. The Federal Statistical Office has adapted the methodology for gathering data to international standards, which has also led to a change in the assignment of certain services with retroactive effect to 2010.

Over a prolonged period, expenditure on health goods as a share of healthcare costs has also shown a marked decline: whereas spending in this sector amounted to 23.5% of healthcare costs in 1960, it had fallen to 9.5% in 2015.

In contrast to the cost of medicines, which as a share of healthcare costs has remained relatively stable, the cost of outpatient care has increased substantially. Compared with 2014, too, spending in the outpatient care sector showed an increase of 2.9%. At the same time, new treatments are improving the quality of life and increasing the chances of a cure and survival. Today, six of ten people with cancer are still alive five years after the initial diagnosis.

Healthcare costs broken down by services

Total costs 2015: CHF 77,754 million (100%)



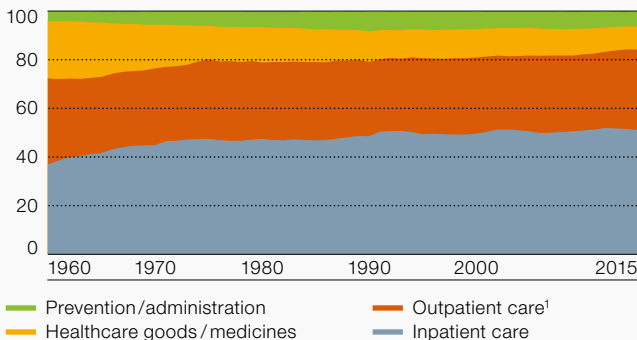
Inpatient care	26.9%	(CHF 20,916 million)
Outpatient care	19.5%	(CHF 15,128 million)
Long-term care	19.8%	(CHF 15,385 million)
Medicines ¹	12.7%	(CHF 9,889 million)
Prevention / administration	6.2%	(CHF 4,810 million)
Rehabilitation	4.4%	(CHF 3,398 million)
Other services	10.6%	(CHF 8,229 million)

Source: Costs and funding of healthcare, Federal Statistical Office, 2017.

¹ At retail prices, including hospital.

Health cost trends by services

Services as a proportion of healthcare costs (in %)



Source: Costs and funding of healthcare, Federal Statistical Office, 2017.

¹ Including other services.

Healthcare costs show greatest increase in the rehabilitation sector

In 2015, the cost of inpatient treatments amounted to around 15.4 billion Swiss francs, whereas the cost of outpatient treatments amounted to 20.9 billion francs. Expenditure on medicines stood at 9.9 billion francs, while administration generated costs of almost 3 billion francs, and 2.7 billion francs went on prevention. For the first time, following a revision of the statistics on healthcare costs, the costs for medications now also include medicines dispensed in hospital in both an inpatient and an outpatient setting.

Since the Health Insurance Act (LAMal) was introduced in 1996, costs have increased in all areas. The greatest increase occurred in the rehabilitation sector, especially in the last few years.

Compared with the previous year, spending on medicines increased by 5.1%. All distribution channels showed an increase in costs. One of the reasons for this was the introduction of new, innovative medicines.

Cost of healthcare according to services

Type of service (in CHF millions)	2011	2012	2013	2014	2015
Outpatient treatment	17,372	18,202	19,036	20,095	20,916
– Doctors	7,592	7,808	8,300	8,702	9,312
– Hospitals	4,744	5,246	5,483	6,047	6,284
– Dentists	3,895	3,978	4,061	4,156	4,068
– Others	948	976	1,002	1,035	1,096
Inpatient treatment	13,584	14,138	14,796	14,947	15,385
Long-time care	13,257	13,832	14,255	14,627	15,128
– Social medical institutions	11,301	11,747	12,040	12,324	12,640
– Spitex	933	1,015	1,096	1,155	1,251
– Others	1,023	1,069	1,118	1,149	1,237
Medicines	8,811	9,025	9,266	9,407	9,889
– Hospitals inpatient	556	519	518	478	503
– Hospitals outpatient	683	724	739	790	802
– Pharmacies and drugstores	4,396	4,462	4,477	4,475	4,679
– Self-dispensing doctors	3,085	3,227	3,428	3,561	3,794
– Import	91	93	104	102	111
Supporting services	3,942	4,208	4,768	5,179	5,490
Rehabilitation	2,808	2,862	2,962	3,101	3,398
– Hospitals	1,792	1,813	1,838	1,826	1,964
– Physiotherapists	906	929	994	1128	1275
– Others	110	121	131	147	159
Other medical goods	2,434	2,403	2,493	2,597	2,739
Prevention	1,695	1,700	1,780	1,851	1,873
Administration	2,996	2,899	2,845	2,876	2,937
Total	66,900	69,268	72,202	74,681	77,754

High proportion of inpatient care

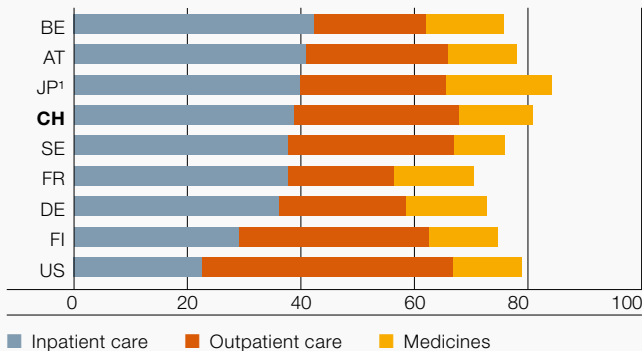
In 2015, spending on curative inpatient treatments was the largest cost block in Switzerland's health system, accounting for more than 38% of expenditure. Outpatient treatment accounted for around 29% of total expenditure. Overall, medicines generated around 13% of total costs. This puts Switzerland around the average compared with other OECD countries.

However, medicines are not considered in the same way in all countries: while medicines dispensed in hospital (outpatients and inpatients) are included in Switzerland, Belgium, Japan and France, this is not the case in Germany, Finland, Austria, Sweden and the USA. Medicines in these countries, with the exception of Germany, also account for a slightly lower proportion of costs than they do in Switzerland. But as a result of the differing coverage of distribution channels, these percentages can only be compared with each other to a limited extent. Out of all the 34 OECD countries, 10 of the 12 countries where medicines account for a lower proportion of costs than they do in Switzerland do not count the medicines dispensed in hospitals.

If healthcare spending is compared with healthcare costs abroad (OECD countries), Switzerland lies in second place at 12.4% of gross domestic product (GDP) behind the USA. In the USA, healthcare spending in 2016 amounted to 17.2% of GDP.

Healthcare costs by international standards

Services as a proportion of total healthcare costs (in %), 2015

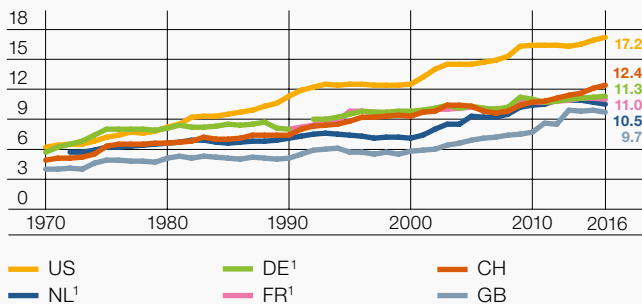


Source: OECD Health Data 2017.

¹ Data for 2014.

Development of healthcare spending

Healthcare spending as a proportion of GDP (in %)



Source: OECD Health Data 2017.

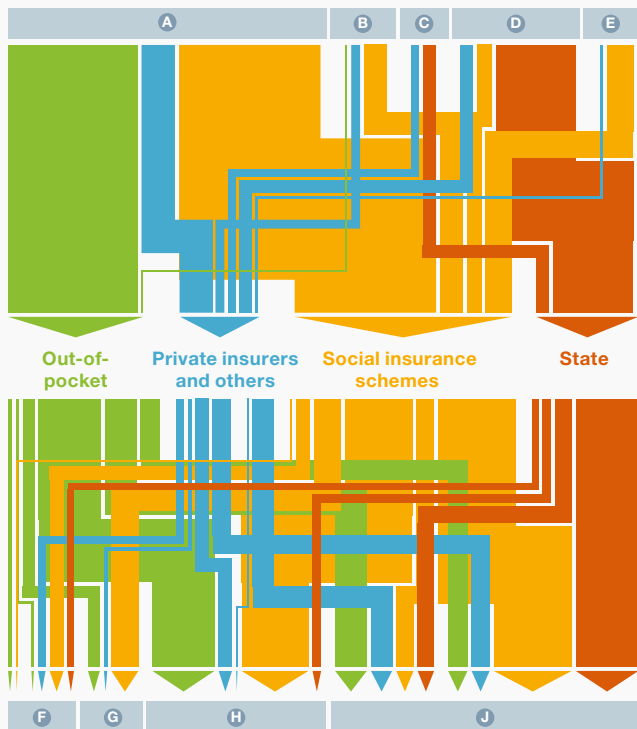
¹ Data not available for several years.

Private households cover more than 64% of healthcare costs

The healthcare costs of around 77.8 billion Swiss francs are covered through various channels. In 2015, more than 64% was financed by private households. The largest proportion was paid into the social insurance systems. Around a fourth was used to pay directly for benefits that were not covered by the insurance (out-of-pocket payments). About 29% was financed directly by the public purse (federal, cantonal and municipal).

Nearly 42% of the costs accrued are paid by the social insurance schemes. Federal, cantonal and municipal authorities pay slightly around 20% of costs. Most of this is paid by the cantons to in-patient facilities (12%), which are financed both by the cantons and through the premiums. This is evident in the flow of payments. The new hospital-financing scheme, according to which the cantons have to cover at least 55% and the health insurers at most 45% of hospital costs, came into force at the beginning of 2012.

Funding streams in the health system



A Private households
(CHF 50,123 m)

B Companies (CHF 4,757 m)

C Communes (CHF 2,272 m)

D Cantons (CHF 15,914 m)

E Federal authorities
(CHF 4,688 m)

F Others (CHF 4,754 m)

G Medical goods (CHF 7,415 m)

H Outpatient service providers
(CHF 25,776 m)

J Hospitals and social medical
institutions (CHF 39,788 m)

Source: Cost and funding of healthcare, Federal Statistical Office, 2017.

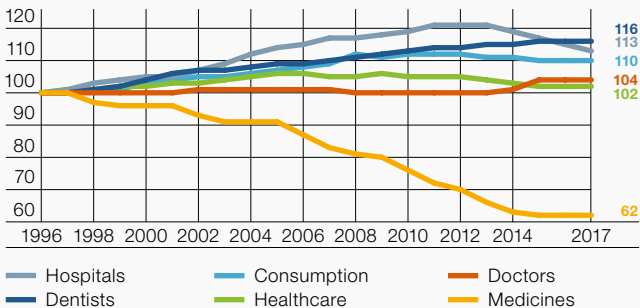
Price index for medicines steadily falling

Since the introduction of the Health Insurance Act (LAMal) in 1996 the dentist index has shown the biggest increase at 16 points. The price index of medical services has remained quite stable since 1996, whereas the price index for medicines has steadily and substantially fallen. In 2017, it lay well below all the other healthcare indices at around 62 points. This development is attributable above all to the price comparison for new reimbursable medicines with the average price in economically comparable states of Europe (AT, BE, DE, DK, FI, FR, GB, NL and SE). The prices of medicines in Switzerland have thus fallen in line with those in the reference countries. Newly launched medicines in Switzerland today are no more expensive than in other European countries that are comparable with Switzerland.

The European comparison shows that prices for health services in Switzerland have remained practically unchanged since 2005. In the Netherlands and Great Britain, however, prices over the same period have increased more than 30%.

Price indices of the health system in Switzerland

Index: 1996 = 100

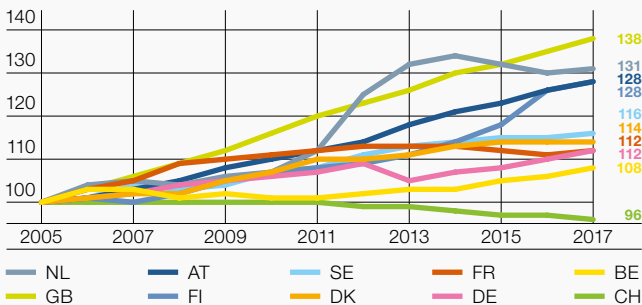


Source: Consumer Price Index, Federal Statistical Office, 2018; conversion of index by Interpharma on the basis of 1996.

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Price indices of the health system compared with other countries

Harmonized Index of Consumer Prices, subindex of health (index: 2005 = 100)



Source: Eurostat, 2018.

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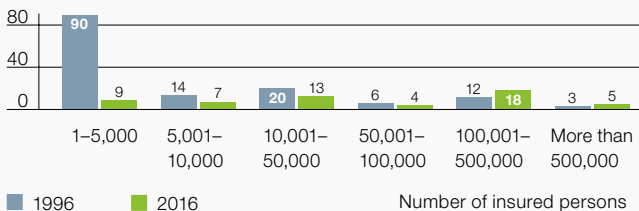
Marked increase in alternative insurance models

In 2016, a total of 56 privately organized health insurers offered mandatory health insurance, the basic social insurance, in Switzerland. All people living in Switzerland can thus choose from a wide variety of health insurers, which they are also free to change every year. The insurers are required to accept all persons, regardless of their health, age or gender. Since the law on mandatory insurance came into force in 1996, there has been a sharp reduction in the number of insurers. In addition, the trend is now away from a large number of insurers with a small number of insured members to a small number of insurers with a large number of insured members.

Most insurers offer their clients a variety of insurance models. They choose a deductible according to which the level of monthly premiums is calculated. The higher the deductible, the lower the premium. Only when this is exceeded does the health insurer pay, although the insured person still has to pay 10% of costs up to a maximum of 700 francs himself. The insured persons pay all premiums themselves. There are no employer contributions. Besides the classical insurance models, alternative insurance models are also popular. They account for more than half of insurance agreements concluded. In these models, the insured person commits to always seeing a defined service provider (e.g. general practitioner) first, in return for which he or she pays lower premiums.

Number of insurers according to number of insured members

Number offering mandatory health insurance

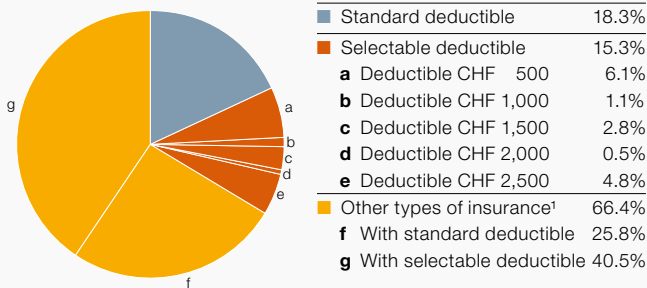


	1996	2000	2005	2010	2016
Total recognized insurers	159	110	90	86	62
Health insurers (mandatory insurance)	145	101	85	81	56

Source: Mandatory health insurance statistics, Federal Office of Public Health, various years.

Insured members broken down by type of insurance

Adult insured members 2016: 6,780,399 (100%)



Source: Mandatory health insurance statistics 2016, Federal Office of Public Health, 2018.

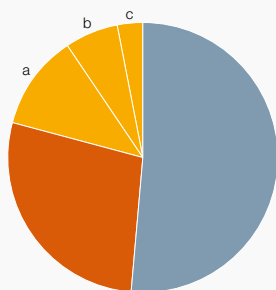
¹ HMO models, gatekeeper models, bonus insurance, etc.

Medicines as a reduced proportion of costs

As in past years, outpatient treatment accounted for the highest gross benefits paid out under mandatory health insurance in 2016. It accounted for 51.5% of total benefits. At 27.7% the benefits for inpatient treatment accounted for the second highest share, followed by medicines with a share of 20.8% – compared with 2015, this proportion rose slightly by 0.3 percentage point. Compared with the previous year, the growth in overall costs is higher than in 2015 at 4.5%. Medicines showed a 6.2% growth versus the previous year and outpatient care an increase of 6.4%. Lower growth was reported for the cost of inpatient care at less than 0.1%.

Compulsory health insurance benefits according to cost categories

Total benefits 2016: CHF 31,484 million (100%)



■ Outpatient ¹	51.5%
■ Inpatient ²	27.7%
■ Medicines ³	20.8%
a Pharmacy	11.5%
b Doctors	6.3%
c Hospital outpatient	3.0%

Source: Mandatory health insurance statistics 2016, Federal Office of Public Health, 2018.

¹ Excluding medicines hospital outpatient.

² Including medicines.

³ Excluding inpatient treatment.

Benefits of mandatory health insurance by cost category

Cost categories (in CHF millions)

	2012	2013	2014	2015	2016
Outpatient	12,431	13,406	14,292	15,218	16,195
Doctor	5,806	6,242	6,633	7,007	7,274
Hospital ¹	3,671	4,003	4,161	4,186	4,509
Laboratory	794	846	913	1,122	1,210
Physiotherapy	655	698	787	897	989
Spitex	628	671	736	794	868
Aids and articles	377	439	473	612	658
Chiropractic	76	77	79	83	93
Others ²	424	431	465	518	594
Inpatient³	7,821	8,695	8,498	8,723	8,724
Hospital	5,937	6,816	6,662	6,880	6,820
Nursing Home	1,846	1,838	1,796	1,799	1,854
Others	38	42	40	44	50
Medicines⁴	5,649	5,825	5,848	6,181	6,564
Doctors	1,663	1,727	1,762	1,863	1,974
Pharmacy	3,253	3,299	3,274	3,461	3,636
Hospital outpatient	732	800	812	857	954
Total	25,901	27,926	28,639	30,122	31,484

Source: Mandatory health insurance statistics, Federal Office of Public Health, various years.

¹ Excluding medicines.

² Complementary medicine, ergotherapy, speech therapy, health insurance benefits covering dentists, transportation and rescue costs.

³ Including medicines.

⁴ Excluding inpatient treatment.

Public Opinion

High degree of satisfaction with the health system

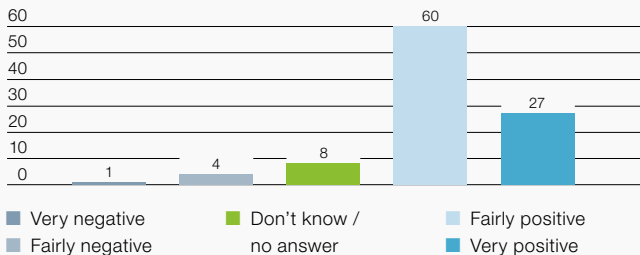
22 years after the Health Insurance Act (LAMal) came into force, the health system as a whole enjoys a high degree of acceptance among the Swiss public, 87% of whom have a fairly positive to very positive impression of the system. This suggests that there are currently no grounds for further major reforms in the health system without clearly discernible benefits to patients or customers.

The view of the electorate is that the ideal health system in Switzerland should allow freedom of choice and provide high-quality services and benefits in sufficient quantity. At the same time, the last few years have seen an ever-larger proportion of people who want greater state control of the health system, the largest proportion in favour of this being recorded in 2014 at 45%. A similar high level of support for this view was again recorded in 2018 at 41%. The proportion of the electorate that approved of a market-oriented health system steadily increased from 2003 onwards until it reached a maximum of 75% in 2010.

Taking stock of the Health Insurance Act

Proportion of electorate (in %), 2018

“Taking stock of the health system 22 years after the enactment of the LAMa, is your impression of the health system in Switzerland...?”



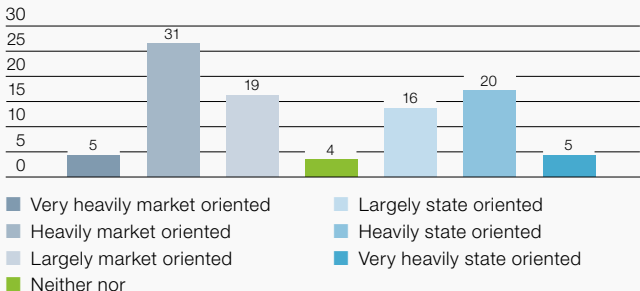
Source: Health Monitor 2018, gfs.bern (N = 1,200), 2018.

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More market or more state

Proportion of electorate (in %), 2018

“What kind of a health system would you like in Switzerland? Would you like a health system in Switzerland where the market rules more than the state or where the state rules more than the market?”



Source: Health Monitor 2018, gfs.bern (N = 1,200), 2018.

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Access to new medicines should be ensured

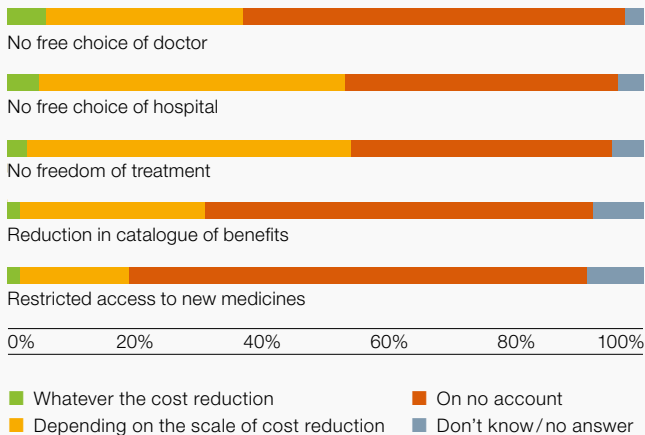
Unhindered access to new medicines is important to the Swiss: 72% of the electorate would not on any account want to be deprived of this access. There continues to be a substantial lack of understanding, for example, when it comes to restrictions in cancer medicine.

By contrast, four other cost-cutting measures were no longer taboo in 2018: At 53% a majority would be prepared to do without a free choice of hospital for cost reasons. Here, the proportion of those who make this dependent on the level of cost reduction is relatively high at 48%. Further, 54% of respondents said they would accept a restriction on the freedom of treatment in order to cut costs. Here again, however, the willingness to accept such restrictions was dependent on the level of cost reduction for a high 51% of respondents. The majorities were less clear-cut as regards restricting the range of healthcare services covered by the insurance, which was accepted by 31% of respondents, and restricting the free choice of the doctor, which was accepted by 37%. But with these two measures as well, the proportion of those who make them dependent on the level of cost reduction is relatively high at around 30% in each case.

Attitude towards cost-cutting measures

Proportion of electorate (in %), 2018

“Which of the following measures would you be prepared to accept if it led to a reduction in costs in the health system? Please say whether you would be prepared to accept it whatever the cost reduction, would be prepared to accept it depending on the scale of the cost reduction, or would not be prepared to accept it on any account.”



Source: Health Monitor 2018, gfs.bern (N = 1,200), 2018.

Pharmaceutical Market

Pharmaceutical market grows in 2017 thanks to new, innovative medicines

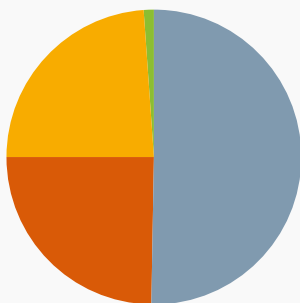
In Switzerland, medicines are dispensed in pharmacies, hospitals, drugstores and, in certain cantons, also by doctors. Non-prescription medicines may be sold in drugstores, while prescription medicines can only be dispensed in the other outlets. In 2017, the pharmaceuticals market in Switzerland grew 4.1% over the previous year to around 5.8 billion francs. In 2016, a slightly higher growth was recorded.

The growth is due in particular to the launch of new and innovative medicines – especially for cancer, but also for multiple sclerosis. Together with certain antiviral medicines, the growth achieved by this group of products accounted for around half of the entire market growth.

The number of packs sold decreased by 1.4% to 185 million units.

Pharmaceutical market in Switzerland by value

Market volume 2017: CHF 5,824.6 million (at ex-factory prices, 100%)



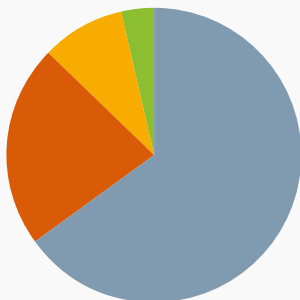
Pharmacies	50.4% (CHF 2,933.8 million)
Self-dispensing doctors	24.8% (CHF 1,446.7 million)
Hospitals	23.7% (CHF 1,382.3 million)
Drugstores	1.1% (CHF 61.8 million)

Source: Interpharma with database IQVIA, 2018.

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Pharmaceutical market in Switzerland by volume

Market volume 2017: 184.9 million packs (100%)



Pharmacies	65.0% (120.1 million packs)
Self-dispensing doctors	22.3% (41.2 million packs)
Hospitals	9.1% (16.8 million packs)
Drugstores	3.6% (6.7 million packs)

Source: Interpharma with database IQVIA, 2018.

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Most medicines are reimbursed

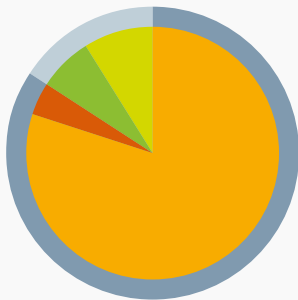
Around 67% of all medicine packs sold in Switzerland were reimbursable in 2017. Most of these were prescription-only medicines. Around a quarter of all reimbursable medicines were non-prescription drugs. But these products are only reimbursed through the mandatory health insurance if a medical prescription is provided. If no such prescription is provided, these medicines can be sold freely, but patients then have to pay the full price themselves.

In the case of medicines not reimbursed through the mandatory health insurance, around one eighth were prescription-only medicines. These include, for example, contraceptives. Most of the medicines not reimbursed were non-prescription products. Many of these non-reimbursable products are covered to some extent by the optional top-up insurance plans.

In terms of value, more than 84% of the total pharmaceutical market consisted of reimbursable medicines in 2017, most of which were prescription-only products at the same time. Non-reimbursed products accounted for less than one-fifth of total pharmaceutical sales. The market for reimbursable medicines increased by 4.9% compared with the previous year. This is mainly due to the introduction of new, highly innovative medicines against cancer and multiple sclerosis. In terms of volume, reimbursable medicines showed a 0.7% decrease in 2017 compared with 2016.

Pharmaceutical market by reimbursability according to value

Market volume 2017: CHF 5,824.6 million (at ex-factory prices, 100%)



Reimbursable products 84.4% (CHF 4,917.3 million)

Prescription only
80.1% (CHF 4,667.0 million)

Over the counter
4.3% (CHF 250.3 million)

Non-reimbursable products 15.6% (CHF 907.3 million)

Prescription only
6.8% (CHF 395.8 million)

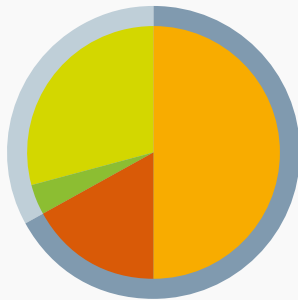
Over the counter
8.8% (CHF 511.4 million)

Source: Interpharma with database IQVIA, 2018.

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Pharmaceutical market by reimbursability according to volume

Market volume 2017: 184.9 million packs (100%)



Reimbursable products 67.1% (124.0 million packs)

Prescription only
50.0% (92.3 million packs)

Over the counter
17.1% (31.7 million packs)

Non-reimbursable products 32.9% (60.8 million packs)

Prescription only
4.0% (7.3 million packs)

Over the counter
28.9% (53.5 million packs)

Source: Interpharma with database IQVIA, 2018.

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Strong growth of generics market

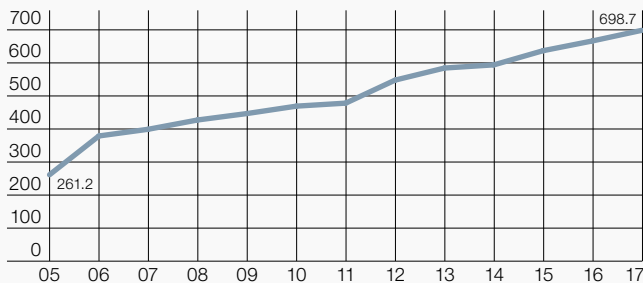
Reimbursable generics achieved sales of 699 million Swiss francs in 2017. Compared with the previous year, the growth amounted to 4.8%. In terms of volume, generics showed a 0.6% increase. The value of the generics market has more than doubled since 2005.

In the generics-eligible market, the proportion of generics has been stable in the last few years. This market includes both generics and also original products whose patents have expired and for which generics exist. In addition, there are also original products for which there are no generics because, amongst other reasons, the price is already so low that they are not financially attractive for generics producers. The market volume of this product group amounted to around 475 million francs in 2017.

In the case of the twenty biggest-selling active ingredients whose patents have expired, generics accounted for nearly 73% in terms of volume in 2017. Thus, almost three of four counting units (tablets, capsules, etc.) sold were generics. In 2005, only around one in two units took the form of a generic. One reason for the marked increase in the proportion of generics between 2005 and 2006 lies in the introduction of the differentiated co-payment rule. According to this rule, the insured person makes a co-payment amounting to 20% of the cost of the original product, but only 10% in the case of generics.

Generics market

Generics market (in CHF millions, at ex-factory prices)



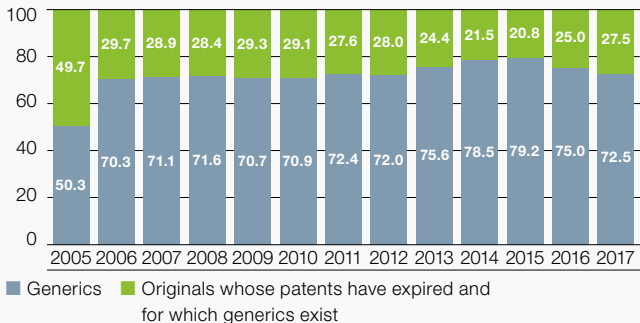
Source: Interpharma with database IQVIA, 2018.

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Generics-eligible market

Generics-eligible active ingredients, top 20 (by value), defined on a monthly basis

Generics as a proportion of the generics-eligible market (in %, on the basis of counting units¹)



Source: Interpharma with database IQVIA, 2018.

¹ Number of tablets, capsules, millilitres, etc. sold.

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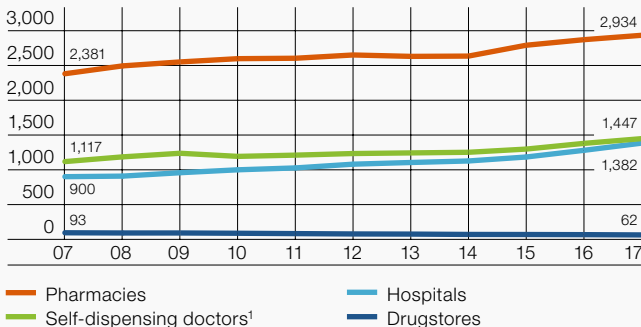
Pharmacies remain the most important sales outlet

Pharmaceutical sales in pharmacies grew in 2017 compared with the previous year. The 1,800 pharmacies in Switzerland accounted for approximately 50% of medicines sold in terms of value. They were thus the most important sales outlet for medicines. Mail-order pharmacies are becoming increasingly important. Drugstores saw a decrease in sales compared with the previous year.

In Switzerland, doctors are also allowed to dispense medicines directly to their patients in certain regions. In 2017, there were around 5,850 practitioners in Switzerland with a patient pharmacy, also known as self-dispensing (SD) doctors. This group thus accounted for around 32% of all medical practitioners. Since the sale of medicines by SD doctors is regulated differently from one canton to another, the proportions of self-dispensing differ between regions. The density of pharmacies also varies from one canton to another. The cantons with a high proportion of SD doctors (Basel-Landschaft, Appenzell Outer Rhodes and Schwyz) generally show a much lower density of pharmacies compared with the other cantons. The sharp increase in 2010 is due to the fact that, since 2010, the data has been gathered according to cantonal regulations. Moreover, a new source of data has been in use since 2011. The figures from 2009 to 2011 are therefore only comparable with each other to a limited extent.

Sales outlets by turnover

In CHF millions, at ex-factory prices

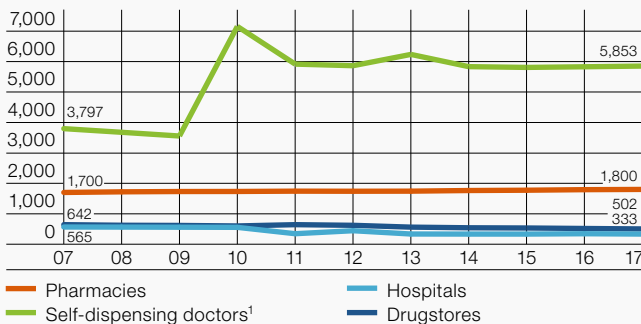


Source: Interpharma with database IQVIA, 2018.

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Sales outlets by inventory

Number of self-dispensing doctors¹, pharmacies, drugstores and hospitals



Source: Interpharma with database IQVIA; Medizinalberuferegister; pharmaSuisse, 2018.

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¹ Doctors with their own pharmacy are described as self-dispensing doctors.

Successful use of biotech and gene tech products

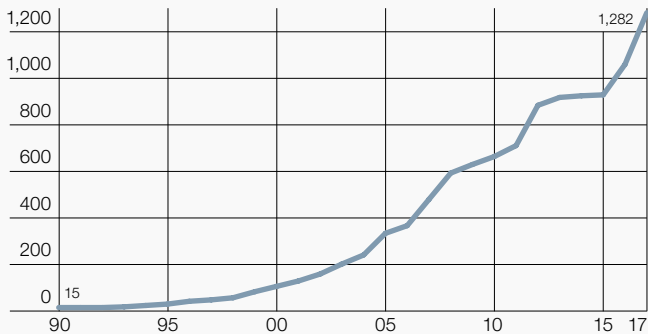
Unlike classical chemical compounds, most active ingredients that are produced in genetically modified organisms using biotechnological methods are substances that are complex, large and high-molecular-weight proteins. In 2017, their value at ex-factory prices amounted to 1,282 million Swiss francs, which is nearly 22% of the total market.

Biotechnologically produced medicines are being successfully used for the treatment of severe or life-threatening diseases such as multiple sclerosis and blood disorders and especially for cancer and diabetes. Precisely in the field of oncology, there is a steady increase in the proportion of gene tech products. Gene technology methods today are used not only in the production process itself, but also in the research and development of almost every new medicine.

A particular feature of biopharmaceuticals is that it is not possible to produce generics with absolutely identical active ingredients. After the patent has expired, similar copies of the highly complex biopharmaceuticals, known as biosimilars, may be approved. A special procedure has been established for these approvals, in which tests of efficacy and tolerability have to be carried out in the laboratory and in clinical studies. However, the producer of biosimilars requires a smaller programme of studies for regulatory approval than has to be provided by the original producer.

Market of biotech and gene tech products

Market development (in CHF millions, at ex-factory prices)

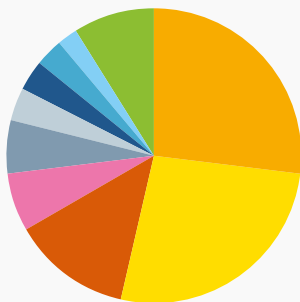


Source: Interpharma with database IQVIA, 2018.

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Indications for biotech and gene tech products

Market volume 2017: CHF 1,282.3 million (at ex-factory prices, 100%)



Rheumatic diseases	27.2%
Cancer	26.6%
Eye diseases	12.9%
Diabetes	6.5%
Multiple sclerosis	5.7%
Vaccines	3.7%
Haematopoiesis	3.4%
Osteoporosis	2.9%
Growth hormones	2.3%
Others	8.8%

Source: Interpharma with database IQVIA, 2018.

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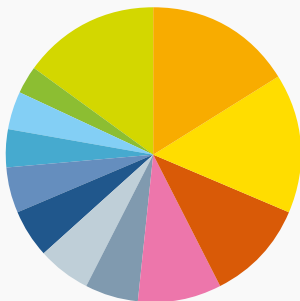
Medicines for diseases of the central nervous system sold the most

In 2017, medicines for diseases of the central nervous system had the biggest market share at 16.3%. This category includes analgesics, medicines for diseases such as epilepsy and Parkinson's and also treatments of mental disorders (hallucinations, delusions and depression). Analgesics formed the biggest group in this category.

The next biggest market share was achieved by cancer medicines (15.3%) and treatments for infectious diseases (11.0%). The former include classical cytostatic agents, which are used in chemotherapy, so-called monoclonal antibodies, which are used alone or in combination with chemotherapy, and also various other products used in cancer therapy. The latter consists of medicines to treat hepatitis C and HIV or antibiotics. Vaccines also fall into this category.

Market share of medicines by indication area

Market volume 2017: CHF 5,824.6 million (at ex-factory prices, 100%)



Central nervous system	16.3%
Cancer	15.3%
Infections	11.0%
Cardiovascular	9.2%
Haematopoiesis	5.9%
Respiratory system	5.8%
Digestive system	5.2%
Musculoskeletal system	5.1%
Sensory organs	4.3%
Urogenital system	4.0%
Skin	3.1%
Others	14.9%

Source: Interpharma with database IQVIA, 2018.

Fewer approved medicines

All medicines either available in Switzerland or intended for export from Switzerland have to be approved by the Swiss Agency for Therapeutic Products (Swissmedic). The applicants have to provide extensive documentation for the approval. This documentation must show evidence of, amongst other things, efficacy, quality and safety, as well as identity, purity and content of the active ingredients of the medicine. The entire approval procedure usually takes 330 days. In 2017, 32 medicines with new active ingredients were approved. In the case of medicines for life-threatening diseases, fast-track procedures that usually take 140 days are also possible. In 2017, seven applications were processed using the fast-track procedure.

In 2017, the number of medicines approved by Swissmedic decreased by 1.4% over the previous year and amounted to a total of 8,296 human and veterinary medicines. Viewed over a prolonged period, the overall number of approvals declined substantially. In 1990, this number stood at 10,119 units – 1,800 more than is the case today.

On the basis of the benefit-risk ratio, Swissmedic classifies human and veterinary medicines according to different dispensing categories. In 2017, categories A and B (prescription only) accounted for 67.1% of all approved medicines.

Number of approved medicines in Switzerland

	2000	2015	2016	2017
Human medicines ¹	7,224	7,593	7,683	7,576
Veterinary medicines	890	719	734	720
Total approved medicines	8,114	8,312	8,417	8,296

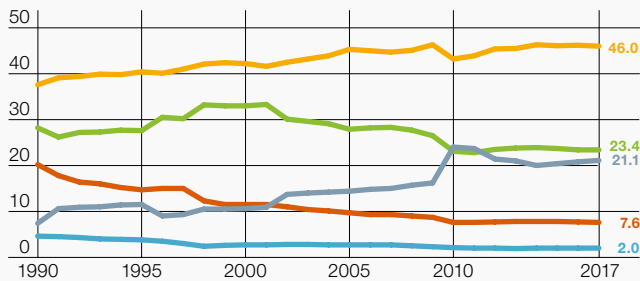
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Source: Annual reports, various years, Swissmedic.

¹ Human medicines, allergens, biotech medicines, homeopathic medicines, vaccines, herbal medicines, radiopharmaceuticals and other product categories.

Dispensing categories over time

Medicines by dispensing category¹ (in %)



- A: Dispensed once on medical or veterinary prescription
- B: Dispensed on medical or veterinary prescription
- C: Dispensed after consultation with medical professional (pharmacies)²
- D: Dispensed after specialist consultation (pharmacies and drugstores)²
- E: Dispensed without specialist consultation²

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Source: Annual reports, various years, Swissmedic.

¹ Certain products are assigned to more than one dispensing category and have therefore been counted more than once (pack size or dose).

² Over the counter.

Growing number of reimbursable medicines

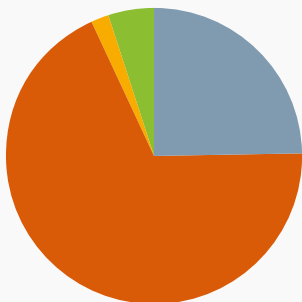
In Switzerland, only medicines included in the so-called Specialties List (SL) drawn up by the Federal Office of Public Health (FOPH) are reimbursed through the mandatory health insurance. The FOPH decides on inclusion in the SL based on the recommendations of the Federal Medicines Committee and stipulates the maximum price for reimbursement. The defining criteria for this are the efficacy, suitability and cost-effectiveness of the medicine concerned.

The cost-efficiency is determined based on a comparison with prices abroad. A therapeutic cross-comparison is also made with medicines in the same indication or with a similar mechanism of action. If an innovation premium is claimed, this must be justified by evidence of increased efficacy or a better risk profile (fewer side effects). It is explicitly laid down in the ordinance to the Health Insurance Act, because Switzerland has an interest in offering a research-friendly environment.

The scope of the SL has increased in the last few years, partly also because there are more and more generics, and generics producers are required to offer all the pack sizes offered with the original product. At the end of 2017, the SL included a total of 2,903 products in 9,630 packs. 93% of these were prescription only (categories A and B), and the remaining 7% were available without prescription (categories C and D). These non-prescription medicines are only reimbursed if they have been prescribed by a doctor. In 2017, more than 41% of all SL packs were generics, as were around 56% of the packs newly included in the SL in 2017.

Reimbursable medicines by dispensing category

Total reimbursable medicines 2017: 9,630 packs¹ (100%)



List A:	2,383	(24.7%)
List B:	6,574	(68.4%)
List C:	197	(2.0%)
List D:	465	(4.8%)

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Source: Federal Office of Public Health, 2017, as at 1.12.2017.

¹ 11 packs (0.1%) could not be assigned to a list. These comprised pens, diskhaler and baby food.

Medicines in the Specialties List (SL)

	1995	2015	2016	2017
Number of products	2,255	2,922	2,948	2,903
Number of packs	5,383	9,649	9,784	9,630

Source: Federal Office of Public Health, 2017, as at 1.12.2017.

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The price of a medicine is not a market price

In Switzerland, the price to the public of a reimbursable medicine (maximum price that is reimbursed by the social health insurance) is not determined on the free market, but is set by the state. It is made up of the sales and marketing portion of the overall cost, the ex-factory price, the sales tax and the value-added tax. The ex-factory price is established on the basis of a therapeutic reference pricing system and an international reference pricing system. In the case of the former, the cost of the product is compared with that of medicines already approved to treat the same disease. The international reference pricing system looks at the prices in countries with economically comparable structures in the pharmaceutical sector. In June 2015, Belgium, Finland and Sweden were added to the basket of countries used for this reference pricing since 2010 (Austria, Denmark, France, Germany, Great Britain and the Netherlands).

The Swiss Agency for Therapeutic Products (Swissmedic) levies a sales tax. This is payable for every pack sold and is dependent on the ex-factory price. It amounts to 5 Swiss francs per pack at most and accounts for more than 50% of the income of Swissmedic.

For every medicine, a sales and marketing surcharge is imposed by law. For prescription-only medicines up to an ex-factory price of 880 francs a surcharge of 12% is imposed, and for more expensive medicines the surcharge is 7%. In addition, a price-related surcharge is levied for every pack. For reimbursable OTC medicines a surcharge of 80% is imposed without a surcharge per pack. In the case of non-reimbursable medicines, pricing is determined by competition.

Composition of the price of a medicine

Pharmaceutical benefits according to LAMal		
Retail price (according to Specialties List, SL) ¹	Value-added tax (2.5%)	
	Sales and distribution costs	Production costs (logistics, infrastructure, personnel)
		Capital costs
	Ex-factory price	Sales tax
		Foreign price comparison (AT, BE, DE, DK, FI, FR, GB, NL, SE) based on ex-factory prices
Therapeutic cross-comparison		

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Source: Federal Office of Public Health.

¹ The relation between retail price and ex-factory price can be found at www.spezialitaetenliste.ch

Marketing surcharges (categories A and B, without LOA¹)

Ex-factory price (in CHF)	+ price-related surcharge	+ surcharge per pack (in CHF)
0.05–4.99	12%	4.00
5.00–10.99	12%	8.00
11.00–14.99	12%	12.00
15.00–879.99	12%	16.00
880.00–2,569.99	7%	60.00
from 2,570.00	0%	240.00

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Source: Federal Office of Public Health.

¹ Service-based remuneration.

Prices of medicines have fallen further

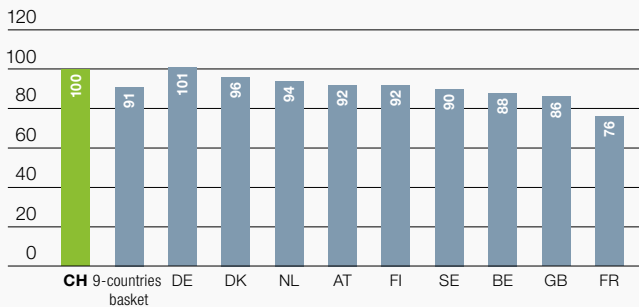
In May 2018, at an exchange rate of CHF 1.09 to the euro, the prices of the 250 or so biggest-selling patent-protected original medicines were 9% higher in Switzerland than the average of the nine reference countries. With a more recent exchange rate of CHF 1.14 per euro, the difference was as low as 6%. This emerges from the ninth joint comparison of international prices by santésuisse and Interpharma. The price difference is primarily due to changes in the exchange rates. Compared to the last price comparison, which was carried out with September 2016 prices, the price difference has become smaller. The reason for this is the price review round 2017, with which the prices of around 400 medicines have been lowered.

The price review by the Federal Office of Public Health (FOPH) is carried out every three years, if the indication for a product is widened and, if a new medicine is just temporarily included in the Specialties List (SL), after the limitation period. The latter is the case with numerous new, innovative medicines. At all these price reviews only downward price adjustments are possible. Therefore, the price differences versus other countries will be reduced further.

The consumer price index of Eurostat measures price trends over a prolonged period. It shows that the prices of medicines in Switzerland have fallen substantially in the last few years. By contrast, the prices of medicines in other reference countries have increased or not fallen as sharply as in Switzerland.

Comparison of drug prices Switzerland vs other countries

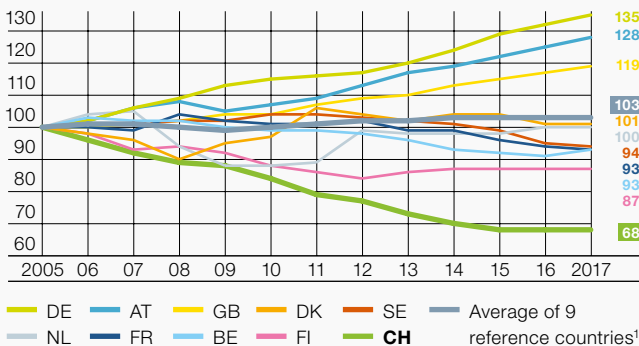
Top 250 original products 9-countries basket (exchange rate CHF/EUR 1.09), May 2018 prices



Source: Joint foreign-price comparison by santésuisse and Interpharma, May 2018.

Harmonized Consumer Price Index

Pharmaceutical products (index, 2005 = 100)



Source: Eurostat, 2018.

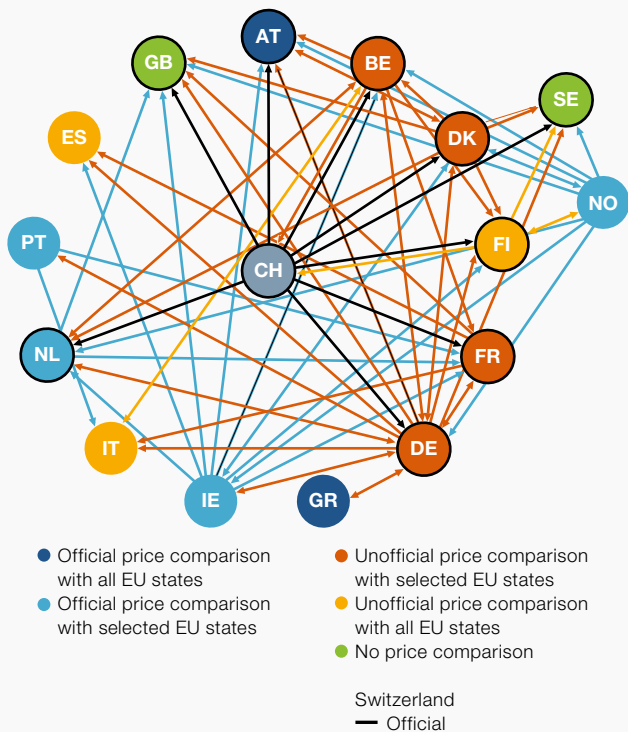
¹ GDP per capita weighted.

Price comparison with other countries

An essential component when the prices of reimbursable medicines are set is the price comparison with other countries. Between 2010 and May 2015, the basket of countries was made up of Austria, Denmark, France, Germany, Great Britain and the Netherlands. Since June 2015, Swiss prices have also been compared with those in Belgium, Finland and Sweden. The international reference pricing system is brought to bear both when a price is set for the first time as part of the process of inclusion in the specialties list (SL) and also when all medicines that have already been included in the SL undergo a price review every three years. In June 2015, therapeutic reference pricing was also considered in the triennial price review. In the three years before this, it was primarily only the international reference pricing system that was applied in price reviews. Since March 2017, equal weight has been given to international reference pricing and therapeutic reference pricing both for the initial inclusion in the SL and also for all price reviews. Before this, greater weight was attached to international reference pricing. The costs of research and development continue to be taken into account during the patent life.

In the three-year price reviews, prices can only be reduced, but not increased. If for example the franc, which is strong at the moment, were to weaken and Swiss prices were lower than the average of the basket of countries, the prices in Switzerland would not be automatically increased. Applications for price increases are possible.

Price comparisons of European states



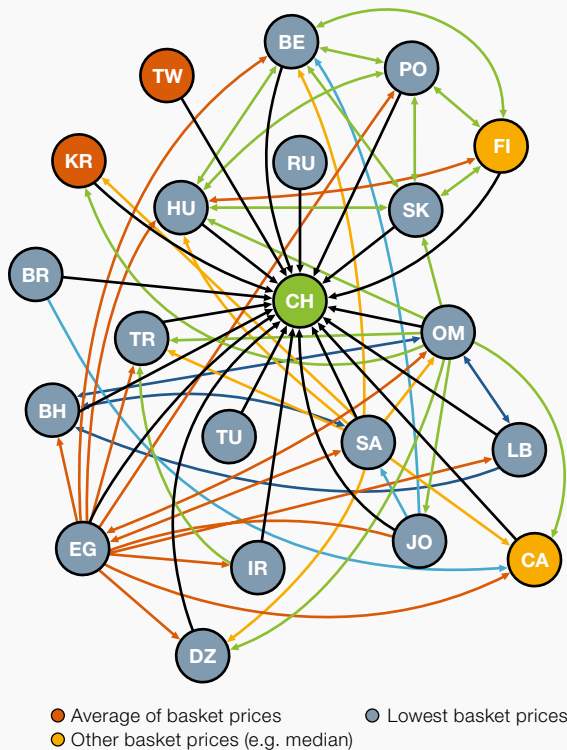
Source: IMS Health; EFPIA.

International impact of Swiss pharmaceutical regulation

Both in industrialized countries and in emerging nations, the prices of Swiss medicines form part of the reference basket that is used to determine prices in those countries. The way in which prices are set using prices from reference markets varies from country to country. In some cases, the lowest price is used, and in other cases an average or median price is used. On the basis of international price referencing, any change in Swiss prices of medicines has a global impact.

A 10% reduction in price would lead to a global decline of almost 1,108 million Swiss francs in sales for the industry. Of this, around 515 million francs would be lost in Switzerland, more than 470 million in industrialized countries and over 122 million in emerging nations. In other words, international price referencing has the effect of doubling the global impact of any price reduction in Switzerland. Apart from the impact on prices, this can also influence company decisions on the launch of innovative medicines and lead to delays in the introduction of products on the Swiss market. With a substantial price reduction in Switzerland, it is possible that the market launch in Switzerland would be considerably delayed.

Switzerland as reference country



Source: The international impact of Swiss drug regulation, Charles River Associates, study on behalf of Interpharma and Novartis, March 2013, Interpharma, 2015.

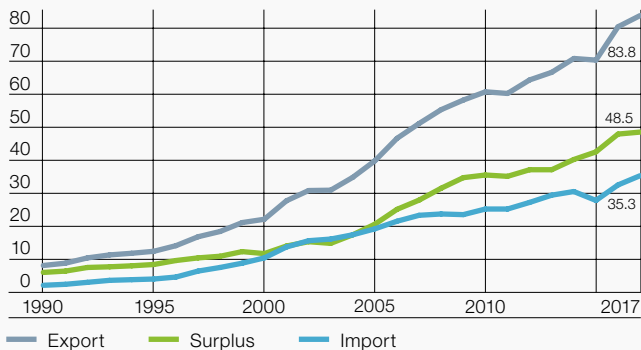
Economic Impact

Pharmaceutical sector as driver of the export industry

In 2017, the pharmaceutical industry once again proved to be the export driver of Switzerland's economy. Compared with the previous year, pharmaceutical exports grew 4.3% and amounted to a volume of almost 84 billion francs. They thus accounted for 38% of Switzerland's export volume. The trade surplus also showed a sharp increase. The most important export market for pharmaceutical products remains Europe.

Development of pharmaceutical trade balance

Pharmaceutical trade balance (in CHF billions)

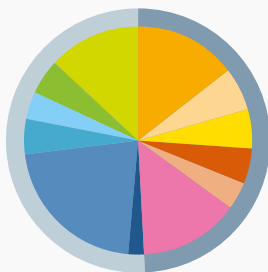


Source: Foreign Trade Statistics, Federal Customs Administration, 2018.

Export of pharmaceutical products

Export volume 2017: CHF 83.8 billion (100%)

△ 38.0% of all Swiss exports



EU	49.2%	Non-EU	50.8%
DE	14.7%	Rest of Europe	2.4%
IT	5.9%	US	21.4%
GB	5.5%	CN	5.2%
BE	5.1%	JP	3.9%
FR	3.8%	BR, RU, IN, MX, TR, KR	5.0%
Rest of EU	14.2%	Other countries	12.8%

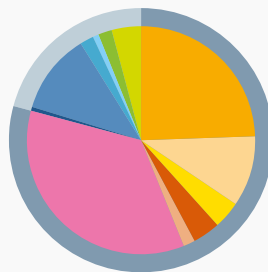
Source: Foreign Trade Statistics, Federal Customs Administration, 2018.

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Import of pharmaceutical products

Import volume 2017: CHF 35.3 billion (100%)

△ 19.0% of all Swiss imports



EU	79.3%	Non-EU	20.7%
DE	24.5%	Rest of Europe	0.6%
IT	10.0%	US	11.4%
GB	4.1%	JP	2.0%
FR	3.7%	CN	0.6%
BE	1.8%	BR, RU, IN, MX, TR, KR	2.1%
Rest of EU	35.2%	Other countries	4.0%

Source: Foreign Trade Statistics, Federal Customs Administration, 2018.

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High export surplus

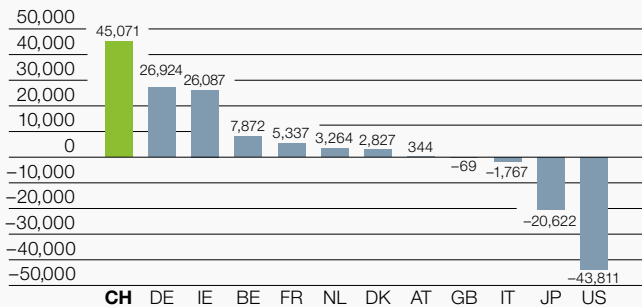
In 2016, Switzerland posted an export surplus of more than 45 billion Swiss francs for pharmaceutical products. This has steadily grown in the last few years. Comparison with the rest of Europe shows that Switzerland occupied a leading position with this result not only relatively, but also in absolute terms. The neighbouring countries, for example, showed much lower export surpluses. Italy, GB, the USA and Japan also show a negative trade balance.

Switzerland's positive trade balance demonstrates the high degree of competitiveness of its pharmaceutical industry. Switzerland is the country with the largest export surplus of pharmaceutical products not only in Europe, but also worldwide. Yet it is not only an important production centre, but also a major research hub.

Innovative medicines, which are often produced using biotechnological methods, continue to be manufactured in the classical industrial countries, and at the moment there are several new production facilities under construction in Switzerland.

Pharmaceutical trade balance compared with other countries

In CHF millions, according to SITC 54 Classification¹, 2016



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Source: UN Comtrade Database, 2018; conversion to CHF by Interpharma.

¹ The Standard International Trade Classification (SITC) is a classification of goods used to classify the exports and imports of a country.

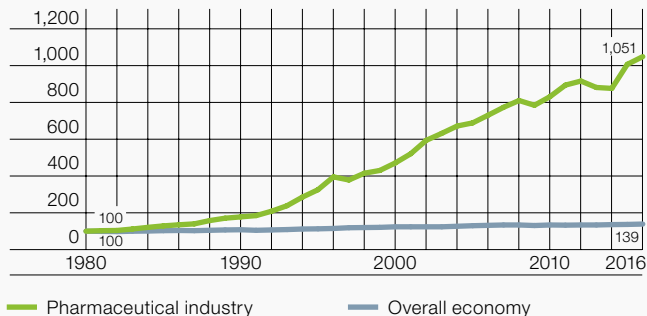
High workplace productivity and major employer

The pharmaceutical industry is the most productive sector in Switzerland. Workplace productivity increased almost every year between 1980 and 2016. In 2016, it was more than ten times higher than in 1980. In the economy as a whole, there was only a very small increase in labour productivity over the same period. The productivity of the pharmaceutical industry is more than four times higher than that of the economy as a whole.

The pharmaceutical sector is a major employer in Switzerland. Thus in 2016, a total of around 45,500 people were directly employed in pharmaceutical companies, which corresponds to 0.9% of all Swiss employees. Indirectly, another 181,000 or so people are employed in the supply sector providing services to the pharmaceutical industry. The number of those directly employed in the industry has nearly doubled since 1995.

Workplace productivity pharmaceutical industry / overall economy

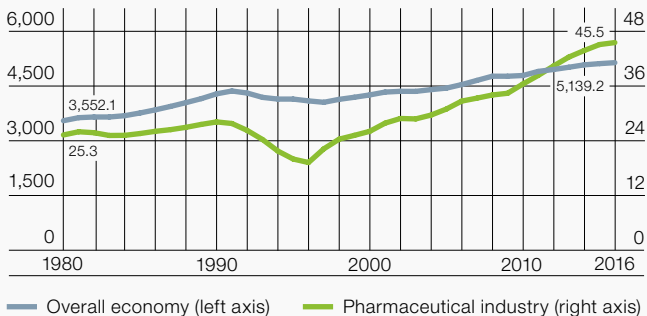
Real labour productivity per full-time equivalent, index: 1980 = 100 (in CHF)



Source: BAK Basel Economics, Polynomics, 2017.

Number of employees pharmaceutical industry / overall economy

Number of employees in the pharmaceutical industry and the overall economy (in 1,000)



Source: BAK Basel Economics, Polynomics, Federal Statistical Office, 2017.

High level of research investments in Switzerland

In 2017, the 24 Interpharma companies spent 6.8 billion francs in research and development (R&D). This high level of financial investment in R&D underlines the importance of Switzerland as a research centre and testifies to the driving power of innovation within these companies. In the research and development process, the research-based pharmaceutical companies shoulder the full risk of research themselves. Particularly the companies with headquarters in Switzerland (Novartis and Roche) invested a lot in R&D, but major R&D investments were also made by companies without headquarters in Switzerland (for example Johnson & Johnson).

In addition to R&D spending, the Interpharma companies in Switzerland also invested half a billion francs in plant, such as technical apparatus, machines and the equipment of buildings and production facilities. Both categories of investment are reflected in high staffing levels. The pharmaceutical industry is thus a mainstay of Switzerland's economy.

Many Interpharma companies are organized as regional companies in Switzerland and are therefore unable to report certain key figures for Switzerland, even though they invest in Switzerland.

Staff levels of Interpharma companies in Switzerland

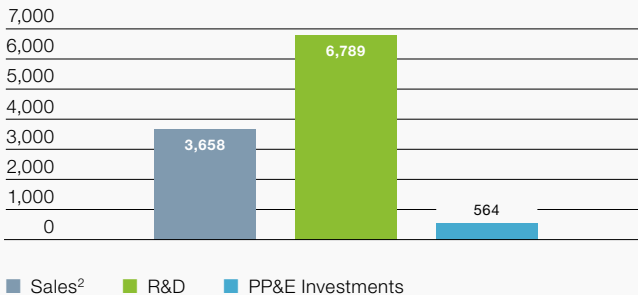
Pharmaceutical sector Switzerland, 2017¹

Workforce (full-time equivalents)	35,210
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Source: Interpharma, 2018.

Interpharma companies in Switzerland

Pharmaceuticals Switzerland, 2017¹, in CHF millions



© Interpharma

Source: Interpharma, 2018.

¹ The figures are based on the 24 Interpharma companies that were members of Interpharma in June 2018, even if they had not yet become members in 2017. Some companies do not break down certain key indicators by country and for this reason the corresponding information is not reflected in these figures. In the case of companies with several divisions, only the information for the pharmaceuticals division was included.

² Prescription-only medicines.

High global spending on research and development

In 2017, the 24 Interpharma companies invested approximately 114 billion francs in the research and development (R&D) of medicines and new treatments. This corresponds to more than 20% of their sales. This reinvestment in R&D is above average compared with other industries. More than 1,090,000 people worldwide were employed in the pharmaceutical divisions of companies.

In the overall groups of Interpharma companies – i.e. with all other divisions, such as medical technology, generics or animal health divisions – more than 1,200,000 people were employed. The groups invested 116 billion francs in R&D and spent around 96 billion francs on the construction of new plants.

Staff levels of Interpharma companies and groups

Worldwide, 2017

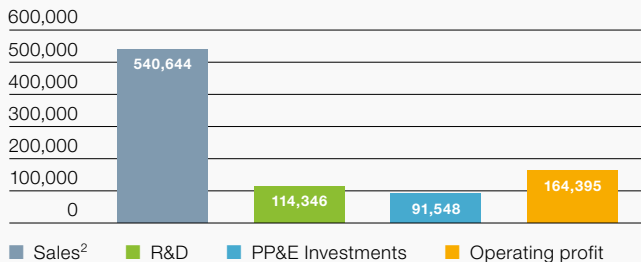
Headcount of Interpharma companies worldwide ¹	1,090,165
Headcount of Interpharma companies worldwide (groups)	1,223,765

© Interpharma

Source: Interpharma, 2018.

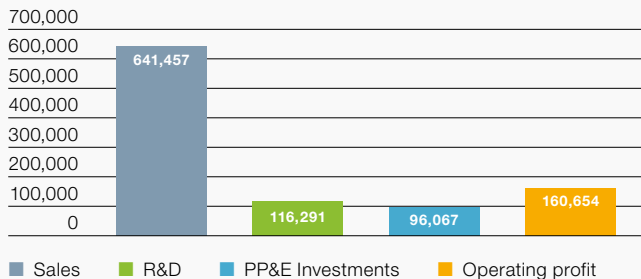
Interpharma companies worldwide

Pharmaceuticals worldwide, 2017¹, in CHF millions



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Groups (all divisions) worldwide, 2017, in CHF millions



© Interpharma

Source: Interpharma, 2018.

¹ The figures are based on the 24 Interpharma companies that were members of Interpharma in June 2018, even if they had not yet become members in 2017. In the case of companies with several divisions, only the information for the pharmaceuticals division was included.

² Prescription-only medicines.

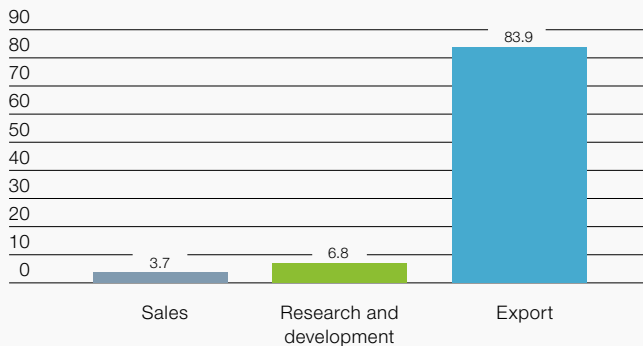
Investments in research thanks to pharma exports

In 2017, the 24 member companies of Interpharma invested almost seven billion francs in research and development (R&D) in Switzerland. That is almost twice as much as the sales they achieved in this country. Attractive framework conditions for R&D are therefore essential for Switzerland. These major R&D investments are only possible thanks to the high export volume of the pharma industry. Pharmaceutical products worth more than 83 billion francs were exported in 2017, making the pharma industry – with an export volume accounting for more than a third of total exports – an important pillar of Switzerland's foreign trade.

Since 1990, Switzerland's pharmaceuticals sector has increased its exports from around eight billion francs almost 84 billion francs. It has thus played a decisive part in this country's economic growth.

Interpharma companies in Switzerland: sales, research and exports

In CHF billions, 2017



Source: Interpharma; export trade statistics, Federal Customs Administration, 2018.

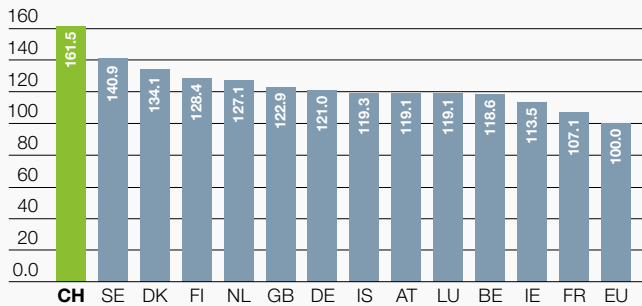
Switzerland leads in innovation ranking

According to the European and Global Innovation Index, Switzerland is both European and world champion in innovation. The particular strengths of Switzerland lie amongst other things in the number of scientific publications in international journals and their citability, patent applications and income based on licences and patents abroad. High employment quotas in knowledge-intensive activities and the high proportion of new graduates are further particular features of Switzerland. The European innovation index is drawn up with reference to 27 indicators, while the global index is based on over 80 indicators.

Despite the relatively good position of Switzerland by European standards, recent developments give some cause for concern. Compared with other countries, for example, Switzerland has fallen behind in clinical research. A master plan to strengthen biomedical research and technology, which the Federal Council approved in December 2013, is aimed at reinforcing the global competitiveness of Switzerland as a research centre and of the Swiss pharmaceutical industry.

Swiss innovation system in comparison with EU countries

European innovation index 2017

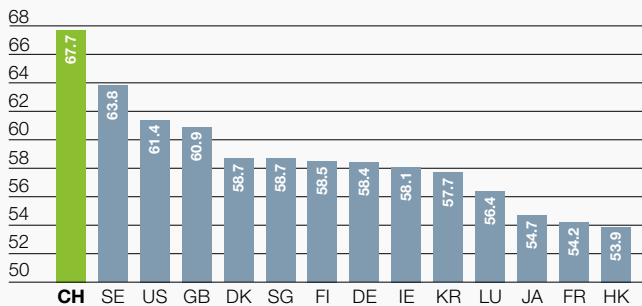


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Source: Innovation Union Scoreboard 2017, European Union, 2017.

Swiss innovation system in worldwide comparison

Global innovation index 2017



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Source: Global Innovation Index 2017, WIPO et al., 2017.

Research and Development

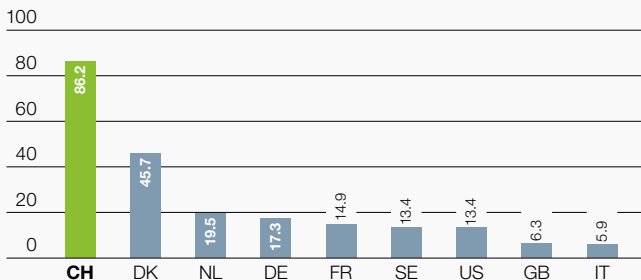
Patent protection promotes medical advances

Patents allow exclusive commercial use of an invention during the 20-year period of patent protection. In return, the research and development results must be made accessible to the public. Third parties can be excluded from the commercial use of the patented invention and the use can be licenced for a fee. In the case of medicines the period of patent protection is reduced de facto to 15 years at the most because of the time it takes to develop the medicine and gain regulatory marketing approval. As a result of patent protection, the investments made in research and development are protected and incentives created for further innovations, because the development of new medicines is time-consuming and expensive, and the pharmaceutical companies are sole bearers of the risk of research. In addition, the manufacturing process of a medicine is relatively easy to copy. Against this background, patent law, which protects biotechnological inventions, is of utmost importance for pharmaceutical and biotech companies in Switzerland. Besides protecting the actual invention, the protection of data from preclinical and clinical trials required by the health authorities (first-applicant protection) makes sure that no other company can refer to and use this data during the period of protection following market approval.

Precisely for a country like Switzerland, which has no raw materials at its disposal, knowledge and know-how are important capital. In pharmaceutical research more than 86 patents per million employees were registered from Switzerland between 2012 and 2016.

Pharmaceutical patents with the European Patent Office

Patent applications with the European Patent Office or via PCT¹ per million employees (in the economy as a whole), average 2012–2016



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Source: European Patent Office, 2018; Calculations by Interpharma.

¹ Patent Cooperation Treaty: international agreement that allows a patent to be requested by filing a single patent application for all states that have signed up to the PCT. Duplication of counts is excluded.

Pharmaceutical industry is crucial in national research and development

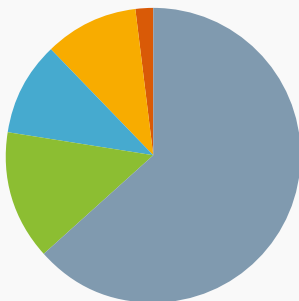
Private industry continues to invest a great deal. In 2015, the private sector accounted for more than 63% of all investments spent. The public sector (federal government and cantons) contributed 24% of research and development (R&D) funding, while around 2% came from private non-profit organizations and from universities.

R&D play an important part in Switzerland's private sector. In-house R&D spending in 2015 amounted to 15.7 billion Swiss francs. This expenditure covers all financial and human resources deployed for R&D within companies in Switzerland (production sites or laboratories). At 5.5 billion francs, the pharmaceutical industry accounted for around 35% of all in-house R&D spending in Switzerland, which was thus around three times as high as the amount spent in the engineering and metal industry.

Many corporate groups are increasingly focusing their R&D spending on individual company units, while other divisions apply the results of their R&D. If this is included in the analysis, the pharmaceutical sector benefited from more than 7.9 billion francs or 51% of total in-house R&D spending in 2015.

Funding of R&D in Switzerland

Total spending on R&D in 2015: CHF 22,059 million (100%)



Private sector	63.5%
Federal government	14.1%
Cantons	10.3%
Foreign country	10.2%
Others ¹	1.9%

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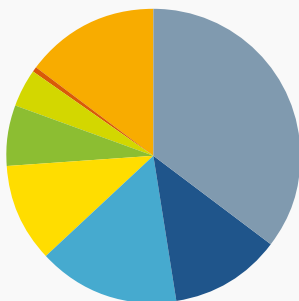
Source: Federal Statistical Office, 2017.

¹ Private non-profit organizations and university funds.

Spending on R&D in the private sector

In-house R&D spending by industry

Total expenditure in 2015: CHF 15,660 million (100%)



Pharmaceuticals	35.4%
Research and development	15.6%
Machinery/metal	12.1%
Information and communications technology	10.9%
High-tech instruments	6.7%
Chemistry	4.0%
Food	0.5%
Others	14.7%

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Source: Federal Statistical Office, 2017.

High awareness of Swiss research

Despite the growing competition from countries that have invested massively in research and development in the last few years (especially in Asia), Swiss research is held in high regard worldwide. In terms of visibility in scientific publications between 2009 and 2013 Switzerland occupies an outstanding position, as shown in the bibliometric evaluation of research in Switzerland by the State Secretariat for Education, Research and Innovation. Of the twenty countries with the largest number of publications, Switzerland was the most productive country at 3.9 publications a year for every 1,000 inhabitants.

Switzerland came in the top five in almost all natural sciences. In the period from 2007 to 2011, however, it was even better placed. But in clinical medicine, Switzerland did not feature among the five best countries and was ranked seventh.

In a scientific publication, other publications are usually cited. The more often an article is cited, the greater its impact in the research community. Swiss publications were cited extraordinarily often between 2009 and 2013 and commanded above-average attention in the research community. First place in the world ranking by impact was taken by the USA. Switzerland occupied third place with a value 17% above the global average. While Switzerland only accounted for 1.2% of publications worldwide, these publications enjoyed high international attention.

Country ranking according to recognition of scientific publications

2009–2013

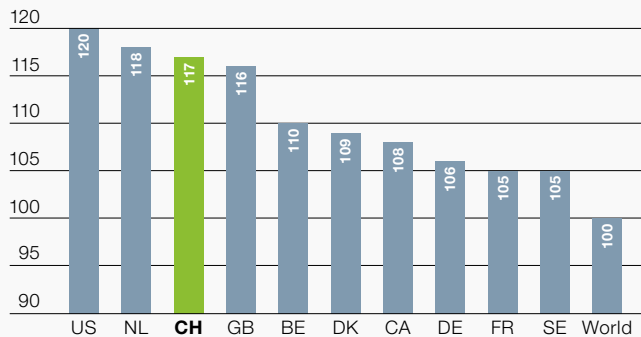
Research field	1	2	3	4	5
Life sciences	US	GB	IS	CH	NL
Physics, chemistry and earth sciences	US	CH	NL	GB	DK
Agriculture, biology and environmental sciences	GB	CH	NL	US	DK
Technological and engineering sciences, IT	DK	NL	CH	US	GB

Source: Bibliometric evaluation of research in Switzerland 1981–2013, report of State Secretariat for Education, Research and Innovation, 2016.

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Scientific impact by country

Top 10, 2009–2013



Source: Bibliometric evaluation of research in Switzerland 1981–2013, report of State Secretariat for Education, Research and Innovation, 2016.

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No biomedical research without animal experiments

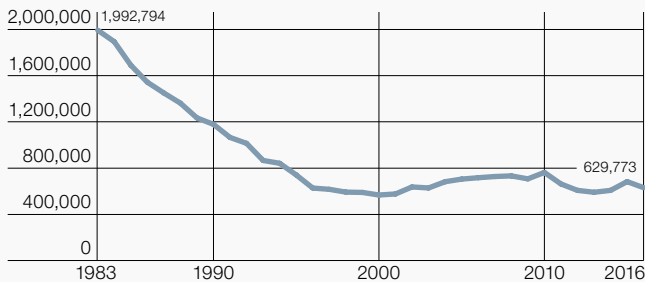
Even the most state-of-the-art technology is not yet able to provide an adequate picture of living organisms and the interplay between organs. For this reason, animal experiments will also remain necessary for the foreseeable future. In 2010, Interpharma companies signed up to a charter committing themselves to compliance with the highest standards of animal welfare both in law and in ethical terms. This also includes efforts relating to the 3Rs in research¹.

In Switzerland, all procedures and actions involving animals for experimental purposes have to be approved by the responsible authorities. Every animal experiment is evaluated by an independent committee, which also includes members of animal welfare organizations. Rats and mice were the most frequently used animals in 2016 and together with birds (incl. poultry) accounted for about 89% of procedures. Since 1983, the total number of animals used has been reduced by more than two thirds. Compared with 2015, the number of animals decreased by 7.7% in 2016. Around 27% of all laboratory animals were used in industry, 59% in universities and hospitals. Compared with the previous year, 2,699 fewer animals (-1.5%) were used in industry in 2016.

¹ The research principle of the 3Rs is aimed at achieving a reduction, a refinement and the replacement of animal experiments.

Laboratory animals in Switzerland

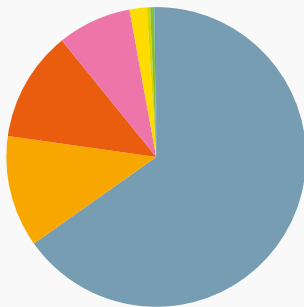
Laboratory animals used in animal experiments requiring a permit



Source: Animal experiment statistics 2016, Federal Food Safety and Veterinary Office, 2017.

Laboratory animals by species

Total demand 2016: 629,773 (100%)



Mice	65.2%
Birds (incl. poultry)	12.0%
Rats	11.9%
Fish	8.0%
Cattle, sheep, goats, pigs, horses, donkeys, diverse mammals	1.9%
Amphibians, reptiles, invertebrates	0.4%
Rabbits, dogs, cats	0.4%
Guinea pigs, hamsters, other rodents	0.2%
Primates	0.03%

Source: Animal experiment statistics 2016, Federal Food Safety and Veterinary Office, 2017.

Fewer clinical trials

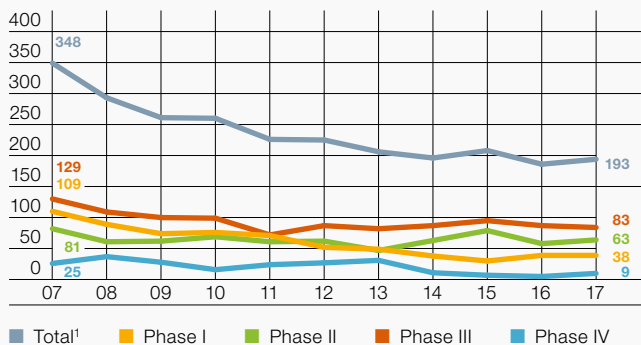
To study the efficacy, safety and quality of new medicines, pharmaceutical companies have to carry out clinical trials before products are allowed onto the market. In these trials, studies are first carried out in healthy volunteers (Phase I), then in a small number of patients (Phase II) and finally in a larger number of patients (Phase III). Only after this can an application for marketing authorization be submitted to the medicines regulatory authority Swissmedic. Once market approval has been granted, the new medicine must be monitored in practice (Phase IV).

Every clinical trial has to be approved by the responsible ethics committee and definitively released by Swissmedic. The number of studies carried out is an indicator of the attractiveness of a research centre. In the last ten years, there has been a marked decrease in clinical research in Switzerland. Since 2007 the number of clinical trials has declined substantially. This trend can be seen in all clinical trial phases.

The master plan approved by the Federal Council in December 2013 with a view to strengthening biomedical research and technology provides for measures to counter this downward trend. Amongst other things, the quality of training for doctors in clinical research at universities and hospitals is to be improved. The Human Research Act, which came into force at the beginning of 2014, aims at speeding up the approval procedure for clinical trials in the ethics committees.

Clinical studies in Switzerland

Clinical trials definitively approved by Swissmedic for medicines



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Source: Swissmedic, 2018.

¹ The total may differ from the sum of Phase I-IV trials because Phase 0 studies and observational studies have also been included in view of their small numbers.

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