Health Policy

Philipp Trein,¹ Christian Rüefli,² Adrian Vatter³

To be published in the Handbook on Swiss Politics, Oxford University Press, 2023.

This chapter analyzes structures, processes, and actors of health policy in Switzerland. In international comparison, Switzerland has a very well-developed health system with universal health insurance coverage and high-quality health care services. The regulation, financing and provision of health care are characterized by three features: federalism – an important role for subnational governments (cantons) -, liberalism - a high importance for economic freedom and individual responsibility -, and subsidiarity - the provision of services by the lowest level of government and non-state actors that are close to the recipients of services. Against this background, this chapter analyzes the politics of Swiss health policy in three steps. Firstly, the text discusses the different actors in the health system and underlines how they are important for health policymaking. Secondly, the chapter provides and historical overview of health policy reforms and outlines the development of institutions and policies related to health policymaking. Thirdly, the chapter discusses political factors that impact on health policy reforms in Switzerland. New national health policies and large encompassing reforms for the entire country are difficult to implement, due to the strong power of interest groups and voters, and, as the cantons have a strong autonomy in the implementation of health policy. Finally, the chapter concludes with a discussion of the challenges for Swiss health policy: rising costs and how to deal with them as well as the growing role of the federal government in national health policymaking.

Keywords: health system, health insurance, health care, public health, health reforms, politics, cost containment, federal government, interest groups, direct democracy

¹ University of Lausanne, email : josefphilipp.trein@unil.ch (Corresponding author).

² Büro Vatter, Bern, email : <u>ruefli@buerovatter.ch</u>.

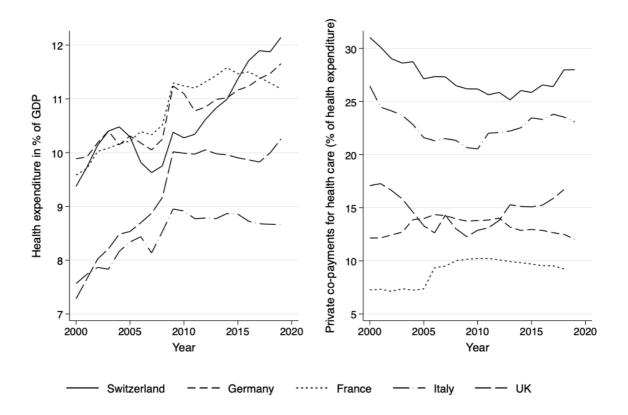
³ University of Bern, email : <u>adrian.vatter@unibe.ch</u>.

1 Introductionⁱ

Health policy entails the regulation, financing, and provision of a wide range of medical and nonmedical services to prevent and cure diseases. This complex task makes it one of the most multifaceted and expensive fields of policymaking in modern states. Strong professional interests, expensive treatments, equality of access, and quality concerns render policymaking challenging. In Switzerland, most of the population is satisfied with the country's health care system (FOPH 2020). From a medical point of view, Switzerland has a high life expectancy at birth (83.2 years in 2020), a low median childhood mortality (3.3 deaths per 1000 live births in 2019), low rates of preventable mortality (83 per 100,000 in 2018), and rather low cancer death rates (167.1 per 100,000 in 2017) (OECD 2020). The main challenge for Switzerland is rising costs for health and long-term care, and the distribution of these costs. In 2019, Switzerland spent 12.2 per cent of its GDP on health care and related expenses, (considerably) more than other European countries (Figure 1).

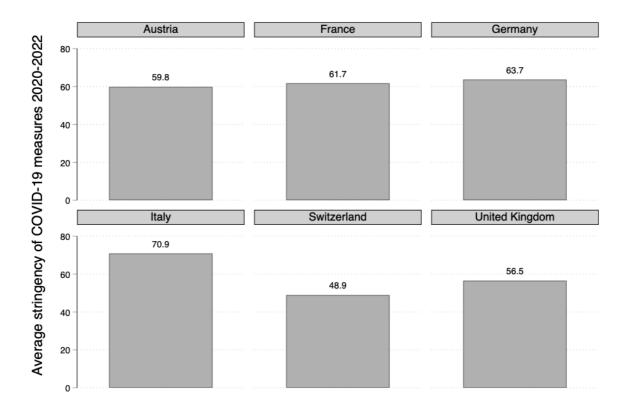
Out-of-pocket expenses for health care are comparatively high in Switzerland, as well. The sum individuals and families must personally pay amounts to more than 25 per cent of national health expenditure (Figure 1). The health system is financed by different sources: between 2011 and 2020 (average), compulsory health insurance – paid by private individuals – and other social insurers covered 43.3 per cent of the total health expenditure, and private households 25.1 per cent (out of pocket). The state financed 19 per cent (cantons: 16.4 per cent). Additional payers are private supplementary insurers (7.1 per cent) and other public (4 per cent) and private sources (1.6 per cent) (BFS 2022a). This distribution of costs indicates the important role of non-state actors, such as health insurers and private financing. The biggest challenge is the rising healthcare burden for the population, as health insurance premiums continually increase, and a considerable share of the population relies on cantonal subsidies to pay their health insurance premiums (Trein et al. 2022).

Figure 1: Swiss health expenditure in a comparative perspective (OECD 2020)



Switzerland differs from other European countries regarding its public health policies which aim to prevent diseases by addressing health hazards (Trein 2018b). Public health policies often entail a regulatory approach where the national government limits economic or individual freedoms, for example regarding the sale and consumption of tobacco. A comparison of Switzerland with other European countries in this regard reveals that the federal government is much more reluctant to implement restrictive public health policies. Switzerland has also differed from other European countries concerning its response to the Covid-19 pandemic. Switzerland's restrictions were far more liberal compared to its neighbouring countries, even more so than other liberal economies such as the United Kingdom, as Figure 2 shows based on a published dataset: (Hale et al. 2021).

Figure 2: Stringency of public health regulation during the Covid-19 crisis



These two examples (Figure 1 and Figure 2) illustrate some of the basic principles of health policy in Switzerland. Firstly, Swiss health policymaking has historically been dominated by the liberal values of individual responsibility, private entrepreneurship, and market mechanisms over public service provision and state regulation (Okma et al. 2010; Achtermann and Berset 2006). Secondly, Switzerland has a decentralised health system, which is in some ways an accumulation of 26 subnational (cantonal) health systems. Historically, health policy was primarily a domain of cantonal responsibility. The federal government only intervenes in areas where competencies were explicitly delegated. Thirdly, and related to the first two principles, subsidiarity has always played a crucial role in Swiss health policy. Subsidiarity entails that health policy issues should primarily be the concern of private organisations or whenever possible dealt with at the local or cantonal level (De Pietro et al. 2015; Trein et al. 2022).

Therefore, health policymaking in Switzerland takes place against a background of a variety of actors required to work together. Interest groups play an important role in the policy process, notably in neocorporatist settings where providers and health insurers negotiate prices. In addition, direct democracy is crucial in the political process of health policymaking. Federal, cantonal, and sometimes even municipal health policy projects often require approval in a popular vote (Vatter 2020).

This section has introduced the reader to the landscape of Swiss health policy structures and actors to provide insights into the political challenges emerging from this context. The text now proceeds according to the following steps: Section 2 will present the key actors in Swiss health policy. Section 3 will provide the reader with an historical overview of the development of the Swiss health system. Section 4 will argue that strong interest groups and direct democracy shape health policy and that cantonal autonomy influences dynamics in health policymaking. Conclusions and outlook make up the final section.

2 Actors in Swiss health policyⁱⁱ

State actors: division of tasks between the Confederation and the cantons

In international comparison, the landscape of actors in the Swiss health system is fragmented because a variety of public and private actors play important roles. In contrast to countries with a centralised national health service, such as the United Kingdom, Denmark, or Sweden, Switzerland has 26 cantonal health systems, each with their own health legislation and competencies regarding the implementation of health policies.

The Confederation's competencies include legislation and supervision in areas such as social insurance (health insurance and accident insurance, amongst others), academic training of doctors and pharmacists, education and training of all non-university health professions, reproductive and transplantation medicine, medical research, and genetic engineering. In addition, federal authorities are responsible for areas of public health policy (health protection and prevention), for example in relation to addictive substances and communicable diseases, and regulation of narcotics, and vaccines, radiation protection, toxic substances, and food safety. The federal government's legislation is often complemented by cantonal implementing laws (Achtermann and Berset 2006, 34–36; Kocher 2010; Trein 2018b).

Apart from implementing the Confederation's health policies, the cantons are responsible for planning and financing inpatient services (hospitals), ensuring outpatient health and long-term care services, supervising professional licensing, and sanitation policing. They also hold competencies regarding public health and prevention including measures against infectious diseases. In the case of an epidemic, the federal government can centralise the policy response through the national law of epidemics (Rüefli and Zenger 2018; Sager and Mavrot 2020). In addition, the cantons oversee educational institutions, and thus for the training of medical and other health professions, and for subsidising health insurance premiums for households with low incomes. Finally, municipalities have a complementary function and are responsible for inpatient care, hospital and nursing homes, and nursing care at home (*Spitex*).

This decentralised structure and the heterogeneity among cantons regarding size, population, and economic structure results in cantonal differences in health care and public health policies, structure of health services, health expenditure, and costs of health insurance premiums, which are lower in Central and Eastern Switzerland and rural cantons than in Western Switzerland, and urban cantons (Braendle and Colombier 2016; Crivelli et al. 2006; De Pietro and Crivelli 2015; Rüefli and Vatter 2001; Vatter and Rüefli 2003; Trein 2018a).

Cooperation between the cantons has a long tradition in health policy. As early as 1919, the Conference of Cantonal Directors of Public Health (GDK) was founded as one of the first intercantonal government conferences. The organisation serves as a platform to coordinate between the cantons and to jointly represent cantonal interests vis-à-vis the federal government (Achtermann and Berset 2006, 94–98; Rüefli et al. 2015, 119f.). In addition, there are other inter-cantonal and regional coordination bodies related to health (Füglister 2012).

Private actors: self-organisation, competition, and personal responsibility

Like other policy areas, subsidiarity, and delegation of tasks to private actors are an important fundamental value of the Swiss health system (Vatter 2003). Comparative analyses show that the Swiss health system is highly market-oriented (Paris et al. 2010). This is also reflected in the fact that Switzerland has the highest per capita expenditure on health care for private households in an OECD comparison (OECD 2022).

Important tasks in health policy are assumed by private actors: the delivery of outpatient healthcare, the qualification of health professionals, and health promotion, and prevention services (Rüefli et al. 2015, 121f.). The subsidiarity principle also shapes the field of health promotion and prevention. At the cantonal and local level, health promotion and prevention activities are provided by civil society organisations, such as health leagues that are committed to the prevention of specific diseases or of tobacco, alcohol, or drug abuse.

Due to their central role in providing healthcare and prevention services, private actors and their interest groups are influential political actors in the health system and play a crucial role in regulating health care. One cornerstone of Switzerland's liberal, subsidiarity-based healthcare system is tariff autonomy (Sager et al. 2010, 22): service provider associations and health insurers jointly negotiate tariff agreements and quality requirements according to a logic of corporatist self-governance. State authorities only approve the results of these negotiations. The subsidiarity system also leads to an institutional entanglement of political and private actors in the exercise of state regulatory competencies at the federal and cantonal level. One example is the health insurance companies, essentially private companies but which are not allowed to make a profit with compulsory basic insurance (but on complementary health insurances). A different example for subsidiarity is that private companies certify the approval of medical devices (Maggetti et al. 2017).

From the perspective of healthcare users, free choice of health insurers and doctors are important elements of Swiss health policy. However, against a background of continuously rising health insurance premiums, residents have increasingly turned to cheaper insurance models where the insurance restricts the choice of doctor in exchange for lower premiums (De Pietro et al. 2015, 99). At the same time, voters have frequently rejected public policies restricting the choice of health insurance or providers (Rüefli 2021).

Individuals retain a large responsibility for financing their healthcare services, independently of their income. Switzerland does not have income-related health insurance rates, but rather per capita

premiums depending on the insurance plan offered by the health insurance company.ⁱⁱⁱ Consequently, there are no direct redistribution mechanisms from high to low incomes in health insurance. In addition, compulsory health insurance provides for cost sharing by the insured (10 per cent deductible, selectable annual deductibles of up to 2,500 Swiss francs for adults). Dental care is 95 per cent financed by private households. This payment system results in the comparatively high proportion of out-of-pocket contributions in Swiss healthcare financing compared to other OECD countries (cf. above). Historically, the Swiss healthcare financing system is built on individual liberty and choice. The National Health Insurance Law from 1994 created a national obligation for all residents to have health insurance, however with no employer contribution and no adjustment of premiums according to salary (there is separate workplace accident insurance). Households with low incomes can apply for cantonal subsidies for health insurance premiums. In 2020, the number of insured persons who received a premium reduction was 27.6 per cent (BFS 2022b).

3 Historical Overview of Health Policyiv

Slow transfer of competencies from the cantons to the federal government

Table 1 provides an historical overview of Swiss health policy changes. Historically, Swiss health policy was a local matter where healthcare services were funded and provided by towns and religious fraternities. By the late nineteenth century, as medical practice advanced and churches and charity organisations could no longer guarantee funding, most hospitals were taken over by municipalities and later by cantons, and the latter began regulating sanitary affairs and medical practices (Achtermann and Berset 2006). Hospital policy, including planning and the running of nursing care institutions, has since been the responsibility of the cantons. Outpatient care has always been left to private, self-employed professionals. Until the late nineteenth century, each canton decided autonomously whether and how it would regulate medical practice; some did not even require a licence. When the Swiss Confederation was established in 1848, it was given the constitutional prerogative to control epidemics. The starting point for health policy at the federal level was a typhus epidemic in 1866 which led to a federal law for epidemic control in 1886 and the establishment of what is today's

Federal Office for Public Health in 1893. In 1877 a federal law stipulating examination requirements for doctors, veterinarians, and pharmacists set minimum standards for the provision of medical services in the cantons (Federal Council 2004, 182). Apart from this law, which was not amended until 2000, there was no federal regulation of medical practice; licensing and supervision of medical practice remains the responsibility of the cantons. Further laws gave the federal government the competency to regulate the education, vocational training, and professional practice of psychological professions (from 2013), and of non-academic healthcare professions (from 2016). Another example of the transfer of competencies to the federal government is the federal law on pharmaceuticals which entered into force in 2000 and replaced a patchwork of cantonal, inter-cantonal, and federal regulations.

Introduction of public and private health insurance

Health insurance was originally a private matter. Sickness funds were set up in the early nineteenth century by entrepreneurs, trade unions, or religious organisations to provide financial support to workers and their families in case of illness, disability, or death (Kocher and Oggier 2001, 108). These were later transformed into insurance funds reimbursing the cost of medical treatment. Historically, there has been great organisational variety, with private and public (municipal) funds, federal and regional funds, and for-profit or non-profit funds open to everybody or limited to a specific community or occupation. An 1890 constitutional amendment authorised the Confederation to establish a health and accident insurance scheme. A first law to implement this scheme and to introduce compulsory health insurance was blocked by a referendum challenge in 1899. In 1911, the Federal Law on Health and Accident Insurance passed by parliament was accepted in a popular referendum. The law defined the minimum requirements to be met by voluntary health insurance funds to receive public subsidies (Federal Council 1991, 99). Later attempts to introduce compulsory health insurance was not amended until 1964 (Federal Council 1991, 106–107). From 1969, due to ever-increasing premiums, health insurance was the subject of many different reform projects

initiated by the federal government or by popular initiatives. However, all of them failed due to lack of consensus on two issues: whether health insurance should become compulsory or remain voluntary, and whether financing should be based on per capita or income-related premiums (Federal Council 1991; Linder et al. 2010). For the most part, left-wing parties and trade unions favoured compulsory insurance and income-related premiums, whereas more conservative and right-wing parties, business associations, and (part of) the medical profession opposed them.

Table 1: Main reforms regarding health insurance and public health in Switzerland

Year	Event	Provisions		
	Reforms related to health insurance			
1899	"Lex Forrer"	Introduced health and accident insurance; rejected by		
		referendum		
1911	Law on Health and	Stipulated regulation and subsidies for voluntary sickness		
	Accident Insurance	insurance funds		
1964	Partial Revision of	Increased subsidies to voluntary sickness insurance funds		
	Law on Health and	and limited differences in premiums charged based on		
	Accident Insurance	gender		
1987	Partial Revision of	Introduced maternity insurance and cost-containment		
	Law on Health and	measures; rejected by referendum.		
	Accident Insurance			
1991	Decrees on Risk	Introduced new measures for risk adjustment between		
	Adjustment and Cost	health insurers, subsidies for low-income groups,		
	Control	limitations of insurance premiums, and co-payments		
1994	National Health	Established a national health insurance regulation; health		
	Insurance Law (KVG)	insurance becomes mandatory		

2000	Partial revision of the	Introduced minimum standards to improve the efficacy of
	KVG	the system and to strengthen solidarity, revised some
		administrative and technical aspects
2003	Partial revision of the	Linked premium subsidies to income; lifted contracting
	KVG	obligation for insurers with all providers; option to
		increase co-payments; rejected by referendum
2007	Partial revision of the	Substantial reform of hospital financing
	KVG	
2008	Partial revision of the	Reform of financing of long-term care-arrangements
	KVG	
2019	Partial revision of the	Strengthened quality and cost-effectiveness
	KVG	

Reforms related to public health and prevention

1887	National Law on	Health protection and policing related to public health
	Epidemics	
1970	Revision of the	Definition of tasks for the federal government and cantons
	National Law on	in case of a pandemic (generalisation of the existing law
	Epidemics	dealing with tuberculosis)
1984	National law on	Failed attempt for a national prevention law (beyond
	prevention	epidemics)
1993	Popular initiative on	Popular initiative to ban alcohol and tobacco advertising
	public health	fails (Zwillingsinitiativen)
2012	Federal smoking ban	Smoking ban in public buildings where individuals work

2012	National law of	Failed attempt to create a national law for prevention with
	prevention	the goal to create a legal basis for preventative health
		policy
2013	Revision of the	Adaption of the national epidemic laws; strengthened the
	National Law on	federal government's role
	Epidemics	

Cost increase and health insurance reform

In the early 1990s, the Federal Council enacted emergency legislation to tackle the rise in health insurance premiums (Laubscher 2006, 173). In 1991, it eventually presented the proposal for a new law on health insurance as a counterproposal to the Social Democrats' 1986 popular initiative "for a healthy health insurance". The parliamentary process, lasting from 1992 to 1994, was highly conflictual. A coalition between the centrist Christian Democrats (CVP/Die Mitte), Liberal Democrats (FDP), and the centre-left Social Democrats (SP) supported the law. Policy formulation resulted in a compromise where the FDP and CVP insisted on maintaining privately organised health insurance, while the Social Democrats were successful in establishing compulsory health insurance. In a referendum in 1994, the electorate eventually supported the parliamentary bill with a majority of 52 per cent (Braun and Uhlmann 2009; Uhlmann and Braun 2011; Linder et al. 2010, 528-529). The new law on health insurance (Krankenversicherungsgesetz; KVG) entered into force on 1 January 1996. The law is the single most important reform in Swiss healthcare policy in the last decades. A cornerstone of this legislation is the introduction of a health insurance system in which compulsory basic insurance and voluntary supplementary insurance are clearly separated. Basic health insurance became mandatory for all residents. Each health insurance provider must provide the same services in the basic health insurance. The federal government has continuously expanded the services which the basic insurance needs to provide. Furthermore, insurance premiums for basic health insurance can no longer vary according to gender and health status.

Market competition and state planning co-exist in health insurance policy

The new KVG did not replace the Swiss system of private health insurance with public bodies. Rather, the reform made some important adjustments to how health insurers are organised and made it mandatory for private health insurance organisations to offer a basic health insurance plan that does not permit them to make a profit or select risks. In addition, health insurers can offer complementary health insurance plans (for example covering dental treatments) which patients can choose providers freely and where insurers are allowed to select based on risks. The system is based on the concept of regulated competition (De Pietro et al. 2015). This concept also applies to healthcare provision, as regulation of tariffs and quality is left to service providers and health insurers. However, health insurance providers are obliged to execute contracts with all service providers eligible to practice within the health insurance system. This limits competition between doctors. Concerning inpatient care, the KVG obliges cantons to conduct hospital planning and to define the types of services that may be billed to health insurers ("hospital lists") (Rüefli 2005).

Further partial reforms of health insurance

The new law on health insurance did not slow the increase in health care costs. Ongoing pressure for cost containment led to a series of reform proposals (cf. Table 1, and Rüefli 2021 for details). A first reform in 2000 introduced minimum standards for the cantons' insurance premium subsidies. In 2002 the Federal Council gave cantons the right to limit admission of outpatient service providers (Rüefli and Monaco 2004; Fuino et al. 2022). Following parliament's rejection of a large project to reform health insurance in 2003, the federal government pursued a strategy to adopt different reforms in small steps (Furrer 2006, 191–192). Various reforms were implemented, for example concerning the overall strategy of health insurance policy, risk equalisation between patient groups, new admission regulations for doctors, premium reductions, and hospital financing. The hospital financing reform of 2009 increased the Confederation's role in defining the conditions of inpatient care delivery in Switzerland and had a major impact on the hospital sector (De Pietro et al. 2015, 210; Rüefli 2021, 670): it strengthened competition among hospitals by introducing a new financing system, by

harmonising the previously different regulations of public and private hospitals, and by changing the modalities of cantonal hospital planning. Another reform concerned the financing of long-term care. The costs for those services were to be shared by health insurers, insured persons, cantons, municipalities, and other branches of social insurance. This reform was approved by parliament in 2008 but only came into force in 2011 after intense debate between the federal government and the cantons. In 2014, a new law on supervision of health insurance was passed and delegated new supervisory powers over health insurers to the Confederation. Nevertheless, due to intense political conflicts, it took until 2021 for the regulations on quality assurance in the KVG to be modified (Federal Council 2022; Haenni 2022).

Other reforms failed in parliament. For example, in 2012, a reform proposal aiming to make managed care insurance plans the default option for everyone failed in a referendum. In 2014, a popular initiative aiming to introduce a unitary public health insurance at the federal level was rejected by citizens in a ballot vote. At the time of writing, different reforms of the healthcare system are in discussion and subject to intense political debate. Since 2018, the federal government has proposed two reform packages aiming at reducing health care cost that combine a variety of measures (cf. Heidelberger 2022a, b). Furthermore, two popular initiatives related to cost containment are pending. One aiming to ensure that households do not spend more than 10 percent of their income on health costs. A second aims at inscribing the requirement for cost containment into the constitution. After a certain level of cost increase, the federal government would be required to impose cost containment measures.

Newer reforms related to prevention and public health

In the post-World War II period, the creation of capacities for financing and delivering healthcare services was the focus of health policymakers. One exception was the federal law to combat tuberculosis which was passed in both chambers of parliament but was nevertheless rejected in a referendum in 1949 (Immergut 1992, 158–161.). Only in the mid-1970s did the focus of health policy change towards reform proposals emphasising general medicine, prevention, and public health as well

as home care options. For example, in 1972 the reform of the Federal Narcotics Act created stricter penalties for drug use. At the same time, a public debate on assisted suicide for elderly and sick individuals resulted in demands by individual cantons (e.g., Basel-Stadt, Zurich) for a federal law on the matter. Today, assisted suicide is legal and widely accepted in Switzerland.

Since the 1980s, prevention and health protection have received more political attention. These issues (re)appeared on the political agenda against the background of increasing case numbers of non-communicable diseases, such as cancer and diabetes, but also due to new infectious diseases, notably HIV/AIDS (Trein 2018b). In the early 1980s, a policy proposal by the Federal Council failed during the consultation process, as the cantons insisted on maintaining their competency on the matter. In 2009, the federal government proposed a new law on prevention and health promotion aiming to define the competencies of the Confederation and the cantons, establishing governance systems and financing and coordination mechanisms, and creating a new Swiss Institute for Prevention and Health Promotion. Supported by a broad coalition of public health actors, the law was eventually blocked in parliament. The parties associated with economic associations feared restrictions of economic freedoms and a paternalism of citizens through state regulations (APS 2009, 201). Due to the lack of explicit legal competencies in the domain of prevention and health promotion, the Confederation responded with several national strategies, e.g., concerning HIV, addiction, non-communicable diseases, cancer etc., which have been implemented in cooperation with the cantons and NGOs active in specific policy areas.

Prevention issues were also subject to popular initiatives. In 1993, with a large majority, voters rejected a popular initiative demanding the creation of national bans on alcohol and tobacco advertising, after strong resistance by the federal government, parliament, and interest groups. The defeat of these "twin initiatives" curbed efforts by the federal administration to push for federal tobacco control and other public health policies. Consequently, advertising restrictions and smoking bans were implemented at the cantonal level (Mavrot and Sager 2018; Trein 2017). The Federal Council and parliament drew up a federal law on protection from passive smoking in a lengthy and sometimes controversial process, which entered into force in 2012. In 2022, voters accepted a popular

initiative demanding restrictions of tobacco advertisement for minors. Since the mid-1990s, different cantons have also modernised their legal foundations for health protection and prevention (Trein 2018b).

In 1993, the Federal Council created a framework for the controlled distribution of "hard" drugs. Initial trials of medically controlled supplies of illicit drugs to addicts showed positive results, so the Federal Council decided to extend the trials (APS 1992–1994). During the same period, a referendum approved the medically prescribed distribution of heroin, confirming the Federal Council's consensus course on drug policy (APS 1996–1998). At the same time, various popular initiatives dealt with drug policy issues. At the end of the 1990s, popular initiatives demanding both a more restrictive and a more liberal drug policy were rejected.

The agenda to change drug policy from a restrictive prohibition-oriented approach to a policy of harm reduction and social reintegration of addicts was based on experiences with the AIDS epidemic (Kübler 2001). From the late 1980s, there were efforts by federal, cantonal, and municipal authorities to prevent HIV infections, coupled with a debate about "taboo subjects such as sexuality, addiction, and death" (Neuenschwander et al. 2005, 35). The developments in AIDS policy led to a change in drug policy, which started to focus not only on penalties but also on socio-political measures. In 2008, the Federal Narcotics Act was revised to create a legal foundation for the so-called 4-pillar concept (prevention including protection of minors, therapy, harm reduction - for example through medically controlled heroin distribution - and repression) in drug policy. Recent efforts to decriminalise cannabis, such as the creation of a legal basis for conducting scientific studies on cannabis use, should also be seen against this background.

In 1970, in the wake of a typhus outbreak in the canton of Valais, the federal government and parliament revised the National Law on Epidemics. The new law contained regulations on the obligation to report communicable diseases and obliged the cantons to delegate the management of measures against infectious diseases to cantonal medical officers (SR 818.101, 327). In 2013, because of more recent pandemics such as the lung disease SARS and the H1N1 flu wave of 2009, the Federal Council undertook a revision of the National Law on Epidemics which was approved in a referendum.

A major change was the creation of the legal basis for a temporary centralisation of decision-making powers in the hands of the Federal Council (Trein 2015; Rüefli and Zenger 2018), which played an important role in the policy response to the Covid-19 pandemic in spring 2020, as it allowed the federal government to impose a coherent national response during the first months of the pandemic. Nevertheless, the law did not work in the way as intended, especially regarding the coordination of measures between the national government and the cantons (Freiburghaus et al. 2021; Schnabel et al. 2022).

4 Political factors affecting health policy reforms^v

The above-discussed presentation of actors and reforms in health policy reveal some important dynamics regarding the political factors influencing health policy in Switzerland. From an institutional perspective, parliament, direct democracy, and federalism play important roles in the policy process. Many health policy reforms – especially those related to the reform of health insurance-related matters at the federal level – are strongly contested in parliament and need to be approved by a popular vote. Against this background, interest groups and voters are important veto players. Due to the important role of federalism and subsidiarity, subnational – especially cantonal – actors play a key role in Swiss health policy.

Voters and interest groups as veto players

In health policy, interest groups – doctors, insurers, service providers and other industries – are decisive veto players in decision-making and in the implementation of reform projects. These actors usually mobilise their influence in the parliamentary process and in referendum campaigns to influence the outcome of the policy process (Immergut 1992; Trein 2018b; Uhlmann and Braun 2011; Vatter 2003).

The stakeholder interests of all the different players in the healthcare system – service providers, health insurers, patient organisations and health leagues – are well-represented in the federal parliament. This makes it difficult for parliament to reach a consensus on reforms and cost-

reducing measures in the health insurance system. This is evidenced by the lengthy duration of debates on reform proposals and by the rejection of some of those proposals. Parliament frequently modifies projects presented by the federal government.

Between 1848 and 2022, voters had to decide on a total of 62 health policy proposals in the broader sense (including regulations on alcohol, tobacco, organ transplantation, abortion, food hygiene, research, and assisted reproduction). The frequency of these proposals has increased significantly since the 1980s. Traditionally, popular initiatives^{vi} related to health policy rarely received the necessary support from a majority of voters and cantons and new transfers of competencies to the federal government often failed due to voter resistance (Vatter 2020). Historical examples of this are the rejection of the first federal epidemic law in 1882 and the first health insurance law ("Lex Forrer") in 1900. In addition, various reforms of the National Health Insurance Law failed in popular votes from the 1970s to the 1990s. Since 2000, five popular initiatives demanding more redistribution in the health system have been rejected. Similarly, referendums and popular initiatives related to public health and prevention regularly failed (a notable exception is a popular initiative banning tobacco advertising targeting minors in early 2022). Nevertheless, voters approved of the pandemic measures taken by the federal government against Covid-19. The law on Switzerland's Covid-19 measures – which put into law the policies taken by the federal government such as financial support for

Cantonal autonomy and implementation of national health policies

Due to the division of tasks between the Confederation and the cantons (cf. section 2), cantons have important autonomy in designing their own health policies including financing such measures through their own taxes (Costa-Font and Greer 2013). At the same time, cantons are responsible for the implementation of federal legislation. Research on policy implementation in Switzerland (Sager et al. 2017, Chapter Policy implementation and evaluation) has shown that cantons often take certain liberties in the implementation of federal laws and policies. Cantons often pursue their own goals, especially in the allocation of subsidies, and instrumentalise federal laws for other purposes.

This problem is visible, for example, in the considerable differences concerning the design of health insurance premium reduction systems, especially the definition of eligible groups (Balthasar 2001). Another example is the obligation for cantonal hospital planning, which was also integrated into the KVG. This provision intended to give cantons the competency to reduce overcapacity in hospitals to curb healthcare costs. However, the cantons used this instrument only had a very indirect effect on costs but augmented political conflicts within cantons between governments on the one hand and providers and the population on the other (Rüefli 2005). The same holds for the competency to restrict the admission of outpatient service providers (Rüefli and Monaco 2004; Sager et al. 2019; Fuino et al. 2022). If cantonal authorities cannot be convinced of the benefits of federal regulations, or if they use their independent programming and regulatory powers in the context of enforcement, there is a risk of enforcement gaps (Sager and Rüefli 2001; Sager and Rüefli 2005). This leads to regional policy inequalities and limited ability to centrally control Swiss health policy.

While federalism can lead to heterogeneous implementation of national health policies, cantonal autonomy offers the possibility to lead the way in addressing policy issues that are blocked at the federal level. The effective blocking of framework legislation around health protection and prevention since the 1980s led several cantons to revise their legislation in this area. For example, in tobacco advertising regulation, some cantons took the lead and implemented corresponding advertising restrictions that went further than existing measures at the federal level (Mavrot and Sager 2018; Trein 2017). In the area of protection against passive smoking, the differences between cantonal regulations contributed to the Federal Council and parliament defining uniform minimum standards (Benteli and Rohrer 2020).

5 Outlook and challenges for Swiss health policyvii

International comparison considers the Swiss health system very successful in terms of its policy performance. Due to the compulsory health and long-term care insurance, the entire resident population has access to high-quality health care with a comprehensive catalogue of services. The population's health and quality of life are correspondingly good and patient satisfaction is high. In

terms of policy, weak points of the system are the lack of transparency regarding the quality and efficiency of medical care, the high costs, and the increasing financing pressure (De Pietro et al 2015; Trein 2019). Politically, complex governance structures (strong interest groups, coalition government, federalism, and direct democracy) make rapid and sweeping reforms difficult. The complexity of the political process in Switzerland is beneficial for democratic legitimacy and local "implementability" of reforms (e.g., Vatter 2020). It requires, however, a constant effort to revise and resubmit policy proposals. In looking ahead there are two main challenges for Swiss health policy: rising healthcare expenditure and a growing strategic role of the federal government

Rising health care expenditure

Since the mid-1980s, cost containment has been the main task for policymakers. Public and private health expenditure in Switzerland is higher than in most other OECD member states, especially out-ofpocket expenses for private households (see Figure 1). For citizens, this has meant rising health insurance premiums. Premiums rose by an average of 3.4 per cent per year between 2000 and 2019, which is higher than GDP or average income rises (BFS 2021). Most of the federal government's reform projects, parliamentary initiatives, and popular initiatives on health issues are concerned with the following overarching goals: to change the incentive structures and mechanisms of healthcare management, to improve the efficiency of the healthcare system, or to curb costs. At the cantonal level, efforts to make hospital care more efficient are an important trigger for health policy initiatives. Since 2003, the Federal Council has presented numerous reform projects, some of which have been adopted and implemented. Against the background of powerful interest groups, cantonal involvement, and direct democracy, cost saving reforms proceed slowly. Some reform proposals failed at the ballot box (see Section 3 and Rüefli 2021). In 2019 and 2021, the federal government presented two packages with different cost containment measures to parliament. The latter decided on some of these measures in 2021, while debate on the others is pending. The proposed measures entail for example changes regarding the pricing of drugs and ambulatory services (cf. Heidelberger 2022a, b).

A growing strategic role of the federal government

In recent years, the role of the federal government has grown ever more important. On the one hand, the Federal Council has resorted to emergency legislation to address urgent problems, for example concerning health expenditure when interest groups and voters blocked quick and comprehensive reforms. In times of crisis, such as the Covid-19 pandemic, legislation invests the federal government with the power to come up with a national policy solution. In new areas of health policy, such as electronic health records, the federal government takes a leading role in providing framework legislation.

On the other hand, the cantons and federal government have increasingly sought a coordinated approach to emphasise that policymaking involves cooperation with different levels of government. One example of this is the National Health Policy Dialogue (Achtermann and Berset 2006, 161–162). This is primarily an exchange and coordination platform between federal and cantonal authorities on topics that are of mutual importance. Yet, private actors are involved only selectively. In addition, the federal government has begun to develop strategic frameworks for its health policy. In January 2013, the Federal Council presented the strategy paper "Health2020", which outlines health policy priorities, goals, and measures. In 2019, the revised strategy "Health2030" followed (Federal Council 2019). The renewed strategy reacts to four main challenges: technological and digital change, demographic and social trends, preserving high-quality and financially sustainable healthcare provision, and positively influencing the determinants of health.

Overall, at the beginning of the 21st century, the Swiss health system is evolving in the path of historically developed structures. Decentralised federalism – where cantons have important fiscal, legislative, and administrative autonomy from the national government –, the strong role of direct democracy, and powerful interest groups are likely to create change "in small steps" instead of fundamental reforms in health policy in the future.

Bibliography

- Achtermann, Wally, and Christel Berset. 2006. *Gesundheitspolitiken in der Schweiz Potential für eine nationale Gesundheitspolitik.* Bern: Bundesamt für Gesundheit.
- APS. 1966–2020. Année politique suisse 1966-2020. Sozialpolitik; Gesundheit, Sozialhilfe, Sport. Bern: Année Politique Suisse, Institut für Politikwissenschaft, Universität Bern.
- Balthasar, Andreas. 2001. Evaluation des Vollzugs der Prämienverbilligung, Wirkungsanalyse KVG. Bern: Bundesamt für Sozialversicherungen.
- Benteli, Marianne, and Linda Rohrer. 2020. Ausgewählte Beiträge zur Schweizer Politik: Kantonale Rauchverbote vor der bundesrechtlichen Lösung, 2005 - 2008. Bern: Année Politique Suisse, Institut für Politikwissenschaft, Universität Bern.
- Braendle, Thomas, and Carsten Colombier. 2016. 'What Drives Public Health Care Expenditure Growth? Evidence from Swiss Cantons, 1970-2012'. *Health Policy*, 120 (9): pp. 1051– 1060. doi: <u>https://doi.org/10.1016/j.healthpol.2016.07.009</u>
- Braun, Dietmar, and Björn Uhlmann. 2009. 'Explaining Policy Stability and Change in Swiss Health Care Reforms'. *Swiss Political Science Review*, 15 (2): pp. 205–240.
- BFS Bundesamt für Statistik. 2021. Krankenversicherungsprämien. https://www.bfs.admin.ch/bfs/de/home/statistiken/preise/krankenversicherungspraemien.h tml, Accessed 10 August 2022.
- BFS Bundesamt für Statistik. 2022a. Gesundheitskosten, Finanzierung nach Finanzierungsregime: <u>https://www.bfs.admin.ch/bfs/de/home/statistiken/gesundheit/kosten-</u> finanzierung/finanzierung.html, Accessed 6 May 2022.
- BFS Bundesamt für Statistik. 2022b. Obligatorische Krankenpflegeversicherung (OKPV). Kennzahlen zur Prämienverbilligung: https://www.bfs.admin.ch/asset/de/je-d-13.04.03.03, Accessed 6 May 2022.

- Costa-Font, Joan, and Scott Greer, eds. 2016. *Federalism and Decentralization in European Health and Social Care*. Basingstoke: Palgrave Macmillan.
- Crivelli, Luca, Massimo Filippini, and Ilaria Mosca. 2006. 'Federalism and Regional Health Care Expenditures: An Empirical Analysis for the Swiss Cantons'. *Health Economics*, 15 (5): pp. 535–541. doi: https://doi.org/10.1002/hec.1072
- De Pietro, Carlo, and Luca Crivelli. 2015. 'Swiss popular initiative for a single health insurer... once again!' *Health Policy*, *119* (7): pp. 851–855. doi: https://doi.org/10.1016/j.healthpol.2015.05.004
- De Pietro, Carlo, Paul Camenzind, Isabelle Sturny, Luca Crivelli, Suzsanne Edwards-Garavoglia, Anne Spranger, Friedrich Wittenbecher, and Quentin Wilm. 2015. 'Switzerland: Health System Review.' *Health Systems in Transition* 17(4): pp. 1–288. doi: https://apps.who.int/iris/handle/10665/330252
- Federal Council. 1991. Botschaft über die Revision der Krankenversicherung vom 6. November 1991. BBI 1992 I 93.
- Federal Council. 2004. Botschaft zum Bundesgesetz über die universitären Medizinalberufe (Medizinalberufegesetz, MedBG) vom 3. Dezember 2004. BBI 2005 173.
- Federal Council. 2019. *Health* 2030 *the Federal Council's health policy strategy for the period* 2020–2030. Bern: Bundesamt für Gesundheit.
- Federal Council. 2022. Strategie zur Qualitätsentwicklung in der Krankenversicherung (Qualitätsstrategie). Sicherung und Förderung der Qualität der Leistungen im Rahmen der obligatorischen Krankenpflegeversicherung. Bern: Bundesamt für Gesundheit.
- FOPH. 2020. Die Wohnbevölkerung der Schweiz ist zufrieden mit der Gesundheitsversorgung.FederalOfficeforPublicHealth(FOPH).

https://www.admin.ch/gov/de/start/dokumentation/medienmitteilungen.msg-id-81536.html. Accessed 20 April 2020.

- Freiburghaus, Rahel, Sean Mueller, and Adrian Vatter. 2021. 'Switzerland: Overnight Centralization in One of the World's Most Federal Countries'. In *Federalism and the Response to COVID-19. A Comparative Analysis*, edited by Rupak Chattopadhyay, Felix Knüpling, Diana Chebenova, Liam Whittington, and Phillip Gonzalez, pp. 217–228. New York: Routledge.
- Füglister, Katharina. 2012. 'Where does learning take place? The role of intergovernmental cooperation in policy diffusion'. *European Journal of Political Research*, 51 (3): pp. 316–349. doi: https://doi.org/10.1111/j.1475-6765.2011.02000.x
- Fuino, Michel, Philipp Trein, and Joël Wagner. 2022. 'How does regulating doctors' admissions affect health expenditures? Evidence from Switzerland'. *BMC Health Services Research*, 22 (1): pp. 1–13. doi: https://doi.org/10.1186/s12913-022-07735-7
- Furrer, Marie-Thérèse. 2006. 'Die KVG Revisionen: wo stehen wir heute?' Soziale Sicherheit CHSS, 4: pp. 191–95.
- Hale, Thomas, Noam Angrist, Rafael Goldszmidt, Beatriz Kira, Anna Petherick, Toby Phillips, Samuel Webster, Emily Cameron-Blake, Laura Hallas, Saptarshi Majumdar & Helen Tatlow. 2021. 'A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker)'. *Nature Human Behaviour*, 5 (4): pp. 529–538. doi: https://doi.org/10.1038/s41562-021-01079-8
- Haenni, Miriam. 2022. Spitalplanung Schweiz Interkantonale Kooperation im Spannungsfeld von nationalen und föderalen Interessen. Zürich: Seismo.

- Heidelberger, Anja 2022a. 'Ausgewählte Beiträge zur Schweizer Politik: Erstes Massnahmenpaket zur Kostendämpfung im Gesundheitswesen (BRG 19.046), 2018 – 2021?'. Bern: Année Politique Suisse, Institut für Politikwissenschaft, Universität Bern.
- Heidelberger, Anja 2022b. Ausgewählte Beiträge zur Schweizer Politik: Dossier: Anstieg der Krankenkassenprämien dämpfen (seit 2020), 2018–2022. Bern: Année Politique Suisse, Institut für Politikwissenschaft, Universität Bern.
- Immergut, Ellen M. 1992. *Health Politics: Interests and Institutions in Western Europe*. Cambridge: Cambridge University Press.
- Kocher, Gerhard. 2010. 'Kompetenz- und Aufgabenverteilung Bund Kantone Gemeinden'. In Gesundheitswesen Schweiz 2010-2013. Eine aktuelle Übersicht, edited by Gerhard Kocher and Willy Oggier, pp. 133–144. Bern: Verlag Hans Huber.
- Kocher, Gerhard, and Oggier, Willy, eds. 2001. Gesundheitswesen Schweiz 2001/2002. Ein aktueller Überblick. Solothurn: Konkordat der Schweizerischen Krankenversicherer.
- Kübler, Daniel. 2001. 'Understanding policy change with the advocacy coalition framework: an application to Swiss drug policy'. *Journal of European Public Policy*, 8 (4): pp. 623–641. doi: https://doi.org/10.1080/13501760110064429
- Laubscher, Theodor. 2006. 'Was hat das KVG an Neuem und an Veränderungen gebracht?' *Soziale Sicherheit CHSS*, 4: pp. 173–78.
- Linder, Wolf, Christian Bolliger, and Yvan Rielle, eds. 2010. Handbuch der eidgenössischen Volksabstimmungen 1878–2007. Bern/Stuttgart/Vienna: Haupt.
- Maggetti, Martino, Christian Ewert, and Philipp Trein. 2017. 'Not quite the same: Regulatory intermediaries in the governance of pharmaceuticals and medical devices'. *The Annals of the American Academy of Political and Social Science*, 670 (1): pp. 152–169. doi: https://doi.org/10.1177%2F0002716217691240

- Mavrot, Céline, and Fritz Sager. 2018. 'Vertical epistemic communities in multilevel governance'. *Policy & Politics*, 46 (3): pp. 391–407. doi: https://doi.org/10.1332/030557316X14788733118252
- Neuenschwander, Peter, Karin Frey, and Kübler, Daniel. 2005. Die Zukunft der HIV/Aids-Prävention in der Schweiz im Zeitalter der Normalisierung: die Situation auf Bundesebene und in sieben Kantonen (Vol. 5). Zürich: Institut für Politikwissenschaft, Universität Zürich.
- OECD. 2020. OECD Health Data. <u>https://stats.oecd.org/Index.aspx?ThemeTreeId=9</u>. Accessed 25.03.2021.
- OECD. 2022. *OECD Health Statistics*. https://stats.oecd.org/Index.aspx?ThemeTreeId=9. Accessed 21 April 2022.
- Okma, Kieke G. H., Tsung-mei Cheng, David Chinitz, Luca Crivelli, Meng-kin Lim, Hans Maarse, and Maria Eliana Labra. 2010. 'Six Countries, Six Health Reform Models? Health Care Reform in Chile, Israel, Singapore, Switzerland, Taiwan and the Netherlands'. *Journal of Comparative Policy Analysis*, 12 (1–2): pp. 75–113. doi: https://doi.org/10.1080/13876980903076237
- Paris, Valérie, Marion Devaux, and Lihan Wei. 2010. 'Health Systems Institutional Characteristics:
 A Survey of 29 OECD Countries'. OECD Health Working Papers No. 50. Paris: OECD
 Publishing.
- Rüefli, Christian. 2005. *Wirkungsanalyse der kantonalen Spitalplanungen. Forschungsprogramm KVG.* Bern: Bundesamt für Gesundheit.
- Rüefli, Christian. 2021. 'Switzerland' In *Health Politics in Europe: A Handbook*, edited by EllenM. Immergut, Karen M. Anderson, Camilla Devitt, and Tamara Popic, Oxford: OxfordUniversity Press.

- Rüefli, Christian, and Adrian Vatter. 2001. Kostendifferenzen im Gesundheitswesen zwischen den Kantonen. Bern: Bundesamt für Sozialversicherung.
- Rüefli, Christian, and Gianna Monaco. 2004. Wirkungsanalyse Bedarfsabhängige Zulassungsbeschränkung für neue Leistungserbringer (Art. 55a KVG). Bern: Bundesamt für Sozialversicherung.
- Rüefli, Christian, and Christoph A. Zenger. 2018. Analyse besondere Lage gemäss EpG: Aufgaben, Zuständigkeiten und Kompetenzen des Bundes, Bern: Büro Vatter, Politikforschung & beratung.
- Rüefli, Christian, Margreet Duetz, Michael Jordi, and Stefan Spycher. 2015. 'Gesundheitspolitik'.
 In *Gesundheitswesen Schweiz 2015 2017*, edited by Willy Oggier, pp. 117–136. Bern: hogrefe.
- Sager, Fritz, and Christian Rüefli. 2001. *Die Auswirkungen der Aufnahme präventivmedizinischer Leistungen in den Pflichtleistungskatalog.* Bern: Bundesamt für Sozialversicherung.
- Sager, Fritz, and Christian Rüefli. 2005. 'Die Evaluation öffentlicher Politiken mit föderalistischen Vollzugsarrangements. Eine konzeptionelle Erweiterung des Stufenmodells und eine praktische Anwendung'. Swiss Political Science Review, 11 (2): pp. 101–129. doi: https://doi.org/10.1002/j.1662-6370.2005.tb00357.x
- Sager, Fritz, and Céline Mavrot. 2020. 'Switzerland's COVID-19 policy response: Consociational crisis management and neo-corporatist reopening'. *European Policy Analysis*, 6 (2): pp. 293–304. doi: https://doi.org/10.1002/epa2.1094
- Sager, Fritz, Christian Rüefli, and Marina Wälti. 2010. Schnittstellen zwischen ambulanter und stationärer Versorgung. Möglichkeiten der Steuerung durch die Kantone. (Obsan Dossier 10). Neuchâtel: Schweizerisches Gesundheitsobservatorium.

- Sager, Fritz, Karin Ingold, and Andreas Balthasar. 2017. Policy-Analyse in der Schweiz-Besonderheiten, Theorien, Beispiele. Zürich: NZZ Libro.
- Sager, Fritz, Christian Rüefli, and Eva Thomann. 2019. 'Fixing Federal Faults. Complementary Member State Policies in Swiss Health Care Policy'. *International Review of Public Policy*, 1 (2): pp. 147–172. doi: http://doi.org/10.4000/irpp.426
- Schnabel, Johanna, Rahel Freiburghaus, and Yvonne Hegele. 2022. 'Crisis Management in Federal States: The Role of Peak Intergovernmental Councils in Germany and Switzerland During the COVID-19 Pandemic'. *dms – der moderne staat*, 15 (1): pp. 42–61. doi: https://doi.org/10.3224/dms.v15i1.10
- Trein, Philipp. 2015. Implementation of revised bill on Epidemics in Switzerland. ESPN (European Social Policy Network) – Flash Report 2015/46. Brussels: European Commission.
- Trein, Philipp. 2017. 'Europeanisation beyond the European Union: Tobacco advertisement restrictions in Swiss cantons'. *Journal of Public Policy*, 37 (2): pp. 113–142. doi: https://doi.org/10.1017/S0143814X16000167
- Trein, Philipp. 2018a. ESPN Thematic Report on Inequalities to Access in Health Care -Switzerland. Brussels: European Commission.
- Trein, Philipp. 2018b. *Healthy or Sick? Coevolution of Health Care and Public Health in a Comparative Perspective*. Cambridge: Cambridge University Press.
- Trein, Philipp. 2019. 'Health Policy'. In Swiss Public Administration: Making the State Work successfully, edited by Andreas Ladner, Yves Emery, Nils Soguel, Sophie Weerts, and Stefan Nahrath, pp. 323–338. Basingstoke: Palgrave Macmillan.
- Trein, Philipp, Adrian Vatter, and Christian Rüefli. 2022. 'Gesundheitspolitik'. In Handbuch der Schweizer Politik, edited by Yannis Papadopoulos, Pascal Sciarini, Adrian Vatter, Silja Häusermann, Patrick Emmenegger, and Flavia Fossati. Zürich: NZZ Verlag.

- Uhlmann, Björn, and Dietmar Braun. 2011. Die schweizerische Krankenversicherungspolitik zwischen Veränderung und Stillstand. Chur: Rüegger Verlag.
- Vatter, Adrian. 2003. 'Strukturen, Prozesse und Inhalte der schweizerischen Gesundheitspolitik'. In Management im Gesundheitswesen und in der Gesundheitspolitik. edited by Andreas Zenger, and Tarzis Jung, pp. 155–165. Bern/Göttingen: Verlag Hans Huber.

Vatter, Adrian. 2020. Das politische System der Schweiz. Baden-Baden: Nomos.

Vatter, Adrian, and Christian Rüefli. 2003. 'Do Political Factors Matter for Health Care Expenditure? A Comparative Study of Swiss Cantons'. *Journal of Public Policy* 23 (3): pp. 301–323. doi: doi:10.1017/S0143814X03003143

ⁱ This section is partially based on: Rüefli 2021 and Trein 2019.

ⁱⁱ This section is based on Trein et al. 2022.

ⁱⁱⁱ Several attempts to change the system, i.e., to introduce income-related premiums or to introduce one unitary

public health insurance, were rejected by the electorate (Rüefli 2021).

^{iv} This section is based on Rüefli 2021 and Trein et al. 2022.

^v This section is based on Trein et al. 2022.

^{vi} These ballot initiatives emerge from a committee of citizens, parties, and/or interest groups. They are different from referendums, which are votes on laws initiated by the federal government.

^{vii} This section is based on Trein et al. 2022.