Child Health Care in Switzerland

Oskar G. Jenni, MD and Felix H. Sennhauser, MD

We provide an overview of Swiss child health care, describe the organizational structures of primary care services and hospital care in pediatrics, and analyze such significant challenges as the decline of the number of primary care physicians in communities and the economic and regulatory pressures on hospitals. We also offer thoughts and ideas for future directions, initiatives, and innovations to ensure that each child achieves the best possible health and quality of life, which is the ultimate goal of health care professionals. New developments should be promoted from a position of strength because Swiss pediatrics is well positioned, and its future remains bright. *(J Pediatr 2016;177S:S203-12)*.

Switzerland is situated in the center of Western Europe; it occupies an area of 41 285 km^2 (15 940 square miles, comparable with that of Denmark or The Netherlands) and has a population of 8.24 million people. The country is a federal state organized on 3 political levels, with 2700 communes (*Gemeinden*), 26 cantons (*Kantone*), and a confederation (*Schweizerische Eidgenossenschaft*). Switzerland has a long tradition of direct democratic processes, such as referendums and initiatives and a form of federalism that grants the cantons and communes a large degree of political self-determination. The nation maintains a state of armed neutrality, is not a member of the European Union (EU), and joined the United Nations in 2002. Culturally, Switzerland comprises 4 main regions with different identities and languages: German, French, Italian, and Romansh. However, its population consists of individuals from even more diverse cultural backgrounds; 24.3% of Swiss residents were born outside Switzerland. According to a number of rankings in economic competitiveness, government transparency, civil liberties, and quality of life, Switzerland is among the most developed countries in the world (Table I). For instance, the country currently has one of the world's highest figures for nominal wealth per adult and per capita gross domestic product (GDP, US $54 996 per capita), a low income inequality index (Gini index 2.85), and a very low unemployment rate (4.5%).

Overview of the Swiss Health Care System

The Swiss health care system offers some of the best outcomes among developed countries (Table I). For instance, individuals benefit from one of the highest life expectancies (at birth, females 85.0 years of age and males 80.7 years of age; at 65 years of age, females 22.4 years and males 19.0 years) and a low infant mortality rate (3.7 deaths per 1000 live births). However, Swiss health care is also one of the most expensive in the world (11.3% of the GDP, US $8980 per capita; Table I).

Although the country has a relative high density of doctors (400 physicians per 100 000 residents), the number of medical graduates at the 5 Swiss medical schools (9.7 per 100 000 residents) is insufficient to cover the projected future demand of the Swiss health care system for physicians. Consequently, many EU physicians have moved to Switzerland under Switzerland's treaty with the EU on the free movement of people. The Swiss Medical Association reported that in 2014, approximately one-third of all physicians in the country were of foreign origin (4/5 from the EU[1]). Moreover, three-quarters of all physicians who joined Swiss hospitals between 2002 and 2008 were foreign nationals. Thus, some Swiss medical schools have recently increased their admission rates, and the Federal Council has made funding available to increase graduations of medical degrees from the current 900 per year to 1200 per year between 2017 and 2021.

The Swiss health care system is primarily governed through the legislation of the cantons. For instance, hospital planning and funding, base rates for the medical tariff system of ambulatory care (TarMed), and medical licensing are regulated by the cantonal ministries of health. However, the health care system of the country is not exclusively run by the cantons but is a mixed system that incorporates federal regulations and private funding. Although hospital care is partly funded by the

DRG	Diagnosis-related groups
EU	European Union
GDP	Gross domestic product
GP	General practitioner
HSM	Highly specialized medicine
SGP	Swiss Society of Pediatrics
SPLASHY	Swiss Preschooler's Health Study

From the Children's Research Center and the Child Development Center, University Children's Hospital Zürich, Zurich, Switzerland

Please see the author disclosures at the end of this article.

0022-3476/$ - see front matter.
http://dx.doi.org/10.1016/j.jpeds.2016.04.056

Table I. Health indicators and economic and population statistics of Switzerland

	1990	1995	2000	2005	2010	2012
Mortality rate, infant (per 1000 live births)	6.7	5.2	4.6	4.3	3.8	3.7
Mortality rate, infant, female (per 1000 live births)	5.9	-	4.2	-	3.5	3.4
Mortality rate, infant, male (per 1000 live births)	7.4	-	5.1	-	4.2	4
Mortality rate, neonatal (per 1000 live births)	3.8	3.5	3.4	3.3	3.2	3.2
Mortality rate, < age 5 y (per 1000 live births)	8.2	6.4	5.6	5.1	4.5	4.3
Mortality rate, < age 5 y, female (per 1000)	7.2	-	5	-	4.1	3.9
Mortality rate, < age 5 y, male (per 1000)	9.2	-	6.2	-	4.9	4.7
Perinatal deaths per 1000 births	7.73	7.00	6.55	6.87	2.70	2.79
Postneonatal deaths per 1000 live births	3.05	1.63	1.33	1.04	0.71	-
Number of stillborn fetuses with a birth weight of 1000 g or more	305	269	197	167	148	153
Number of early neonatal deaths with a birth weight of 1000 g or more	-	-	-	-	67	75
Number of live births with a birth weight of 1000 g or more	83 429	81 696	77 878	72 023	79 616	81 472
Immunization, measles (% of children ages 12-23 mo)	90	83	81	87	92	92
Immunization, diphtheria, tetanus, and pertussis (% of children ages 12-23 mo)	90	89	88	94	96	95
Hospital beds (per 1000 people)	-	-	-	5.5	5	-
Nurses and midwives (per 1000 people)	-	-	11	-	17.5	-
Physicians (per 1000 people)	3	3.2	3.5	-	4.1	-
Lifetime risk of maternal death (%)	0.01	0.01	0.01	0.01	0.01	-
GDP growth (annual %)	3.67	0.48	3.67	2.69	2.95	1.05
GDP per capita (constant 2005 US $)	48 173	46 248	50 188	51 734	54 643	54 996
Health expenditure per capita, PPP (constant 2005 international $)	-	2566	3230	4027	5328	6062
Health expenditure per capita (current US $)	-	4308	3541	5637	7697	8980
Health expenditure, total (% of GDP)	-	9.33	9.91	10.86	10.88	11.30
Gini index	-	-	33.68	-	-	28.50
Employment to population ratio, ages 15-24 y, total (%)	-	62.30	64.80	59.90	62.50	61.60
Unemployment, youth total (% of total labor force ages 15-24 y)	3.20	5.50	5.00	8.80	7.80	8.40
Life expectancy at birth, total (y)	77.2	78.4	79.7	81.2	82.2	82.7
Fertility rate, total (births per woman)	1.6	1.5	1.5	1.4	1.5	1.5
Population (total)	6 715 519	7 040 687	7 184 250	7 437 115	7 824 909	7 996 861
Population ages 0-14 y (% of total)	17.0	17.6	17.4	16.3	15.1	14.8
Population density (people per km^2 of land area)	167.9	176.0	179.6	185.9	195.6	199.9
Population growth (annual %)	1.0	0.7	0.6	0.6	1.0	1.1
Rural population	1 800 834	1 860 290	1 916 614	1 974 033	2 062 803	2 096 649
Rural population (% of total population)	26.8	26.4	26.7	26.5	26.4	26.2
Adolescent fertility rate (births per 1000 women ages 15-19 y)	6.4	6.0	5.5	4.8	2.9	1.9
Birth rate, crude (per 1000 people)	12.5	11.7	10.9	9.8	10.3	10.3

cantonal ministries of health and the communes, all residents are required to obtain their own health insurance (though some poorer individuals are subsidized) to cover health care. In addition, 10% of the health care expenses are met by the patients themselves (*Selbstbehalt*) and even more is funded directly out of the pocket of patients (exact figures are not known). Traditionally, the Swiss health care system has had no gatekeepers; patients can freely choose their providers, directly access primary care, and also may consult specialists without referral unless the insurance policy imposes specific restrictions.

The health care structure has recently gone through a period of federal reorganization, in particular at the hospital level where diagnosis-related groups (DRG) were introduced in 2012. This is a classification system, that relates the number and type of patients treated to the resources required by the hospital from the private sector or the cantons. Another current project is the modification of the tariff system of ambulatory care. However, health care reforms are slow and challenging to enforce, both because the different stakeholders (physicians, hospitals, patient organizations, cantons, federal authorities, insurance companies, pharmaceutical companies) often have divergent objectives and because the allocation of competences between the federal, cantonal, and private level is not clear.

Differences of Health Care between the Swiss Language Regions

There are no fundamental differences in the structures of health care between the different language regions except for cantonal variations because of their political self-determination. Thus, Switzerland offers the opportunity to address cultural determinants of health indicators without the bias of different health care systems. Indeed, subtle variations in many aspects of Swiss health care exist because of the differing beliefs, norms, expectations, matters of preference, and habits in the French, German, Italian, and Romansh parts of the country. Studies in adults have shown that some indicators of health vary between the German- and French-speaking parts of Switzerland, which resemble those between Germany and France.[2] Similar findings have been reported for children and adolescents. For example, language region has a significant influence on physical activity and obesity in Swiss children, independent of individual, social, and environmental factors.[3,4] More specifically, children from the German-speaking region were more physically active and