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INTERNATIONAL HEALTH CARE SYSTEMS

Individual Responsibility and Community Solidarity — The Swiss Health Care System

Nikola Biller-Andorno, M.D., Ph.D., and Thomas Zeltner, M.D.

Over the years, the Swiss health care system has repeatedly been mentioned by commentators as a potential model for the United States. Switzerland, with a permanent resident population of 8 million, has health expenditures that accounted for 11.4% of its gross domestic product (GDP) in 2012 — similar to spending levels in Canada, France, and Germany (see table). Although the Swiss health care system is not cheap, its overall performance is among the best among countries in the Organization for Economic Cooperation and Development (OECD), with high levels of patient satisfaction and a life expectancy that's among the highest in the world (similar to those in Japan and Iceland).[1] Nevertheless, the system has its challenges.

An interactive graphic is available at NEJM.org

Switzerland is faring rather well economically: its GDP per capita is the fourth highest in the world, according to the World Bank, and its unemployment rate is only 3.2%. The country has a diverse, international population. Almost a quarter (23.8%) of the population consists of non-Swiss residents; there are four official languages. The government has a federalist, decentralized structure.

The health system has traditionally been overseen by the 26 cantons, which are responsible for the planning and delivery of health services, partial financing of hospitals, and provision of subsidies for insurance premiums. The central government's role is to issue federal health legislation, regulate the health insurance market, define the package of health care services covered, and approve the payment mechanism (mostly fee for service in ambulatory care and case-based payments [based on diagnosis-related groups, or DRGs] in inpatient settings). This division of responsibilities makes steering the system somewhat difficult.

Switzerland's governance involves direct political participation, so any changes in health policy may be subject to popular vote; recent examples include a bill on integrated care that encouraged the development of managed-care organizations and a proposal for a single statutory health insurance program, both of which were rejected. Because of this system, policymaking is usually pragmatic and consensus-oriented to avoid further delay in processes that are already rather lengthy. Health-sector lobbying groups with competing interests (those of the pharmaceutical industry, insurers, and health

Selected Characteristics of the Health Care System and Health Outcomes in Switzerland.*

Variable	Value
Health expenditures	
Per capita (U.S.$)	8,980
Percentage of GDP	11.3
Out-of-pocket (% of private health expenditures)	73.4
Public sources (% of total)	61.7
Health insurance	
Percentage of population covered	>98
Source of funding	86% premiums from insured persons; 14% taxes (premium subsidies)
Average physician income (U.S.$)	
Self-employed general practitioner in 2009	185,158
Self-employed specialist in 2009	100,700–388,700 (depending on specialty)
Generalist–specialist balance in 2014 (%)	
Generalists	37.4
Specialists	62.6
Access	
No. of hospital beds per 10,000 population in 2011	50
No. of physicians per 1000 population in 2011	3.9
Primary care physicians using electronic medical records (%)	41
Life and death	
Life expectancy at birth (yr)	83
Additional life expectancy at 60 yr (yr)	25
Annual no. of deaths per 1000 population	9
No. of infant deaths per 1000 live births in 2013	4
No. of deaths of children <5 yr of age per 1000 live births in 2013	4
No. of maternal deaths per 100,000 live births in 2013	6
Fertility and childbirth	
Average no. of births per woman	1.5
Births attended by skilled health personnel in 2006 (%)	100
Pregnant women receiving any prenatal care (%)	>90
Preventive care	
General availability of colorectal-cancer screening at primary care level	Yes
Children 12–23 mo of age receiving measles immunization in 2013 (%)	93
Prevalence of chronic diseases (%)	
Diabetes in persons 20–79 yr of age in 2013	5.9
HIV infection in 2014	0.4
Prevalence of risk factors (%)	
Obesity in adults ≥18 yr of age in 2014	19.4
Overweight in children <5 yr of age	NA
Underweight in children <5 yr of age	<1.0
Smoking in 2011	26

* Data are from the World Bank, the Swiss Federal Office of Public Health, *Schweizerische Ärztezeitung*, the Organization for Economic Cooperation and Development, the Commonwealth Fund, the World Health Organization, and indexmundi.com and are for 2012, except as noted. GDP denotes gross domestic product, HIV human immunodeficiency virus, and NA not available.

care providers) have strong links with the National Parliament — one reason for the slow pace of legislative reforms. Overall, the health care sector is seen as a flourishing, important, innovative industry and a strong motor for economic growth and prosperity.

Competition among health care providers and payers has an important place in the design of the Swiss health care system. It's supposed to guarantee high quality as well as efficient and cost-effective service delivery. However, it also makes the system prone to cartel-like collusion and necessitates strong governmental supervision.

There is little explicit rationing of services; some studies have shown some degree of implicit rationing, particularly in inpatient elderly care services and psychiatric care, and the notion of a "smarter medicine" and the motto "less is more" have gained considerable traction recently. Cost is a concern, but there has been no cost explosion; rather, between 1999 and 2009, the rate of growth in per capita health spending has been 2.0%, below the OECD average increase of 4.1% (OECD Review of Health Systems Switzerland 2011, www.ub.unibas.ch/digi/a125/sachdok/2012/BAU_1_5753611.pdf). Accordingly, the health system is not perceived as being in crisis, although calls for sustainability are receiving increasing attention.

The Swiss population has repeatedly voted for retaining consumer choice (e.g., free choice of providers and insurers) even if it comes at a higher cost. One of the main reasons why voters rejected the draft law on integrated care was concern about losing the freedom to choose one's physician. Given the vast array of op-

tions, however, patients may find it challenging to behave as smart consumers who are keen to shop for what best meets their wishes and needs.

Patients in the Swiss system incur substantial out-of-pocket costs: one third of health care spending comes from copayments, deductibles, and other private payments, according to the OECD. The population may accept this state of affairs because the federal law on health insurance that promised universal access based on mandatory health insurance dates back only to 1994 — so unlike countries with a long tradition of a national health service or comprehensive social insurance, Switzerland faces no historically based societal expectation that the state or taxpayers will systematically cover all health care expenses. Indeed, the Swiss government has consistently believed that increased cost sharing will improve cost awareness and containment.

Despite its market orientation, the system depends to a substantial degree on taxpayer funding, which accounted for 31% of health care spending in 2012. The burden of insurance premiums is attenuated in two ways: low- and middle-income people (37% of the population) receive subsidies to pay their premiums and to cover up to 55% of their hospital bills. The coverage provided through compulsory, individually purchased health insurance is a comprehensive benefit package that is defined by federal authorities. Consumers can choose among various models — the standard model or any of several managed-care models, which limit immediate access to specialists in exchange for lower premiums.

The health insurance market, consisting of about 60 companies, is supervised by the Federal Office of Public Health; this office must approve insurance premiums, which are community-rated. Proposals for a single statutory insurance plan have repeatedly been voted down, most recently in 2014.[2] Premiums for health insurance are not supposed to exceed 8 to 10% of household income and are subsidized by tax money in order to achieve this goal. Insurers are not-for-profit and have to pay back any surplus to their insured population.[3]

This well-developed public component of the Swiss health care system reflects an egalitarian sentiment that everyone should have access to the same good care. Social cohesion and solidarity are important values shaping public

PREGNANCY AND CHILDBIRTH

A healthy 23-year-old woman is pregnant for the first time.

After Ms. Schifferli takes a home pregnancy test to confirm that she's pregnant, she seeks personal recommendations for a gynecologist. Her mandatory health insurance covers comprehensive services for pregnancy, birth, preparatory courses, and breast-feeding advice, as well as midwifery services; a detailed list of reimbursed services is available on the website of the Federal Office of Public Health. For an uncomplicated pregnancy, there will be seven checkups, including two ultrasounds, during pregnancy and another checkup 6 to 10 weeks after delivery. There are no deductibles or copayments for routine pregnancy care.

In general, services eligible for reimbursement must be effective, appropriate, and cost-effective, but homeopathic and traditional Chinese medicines, which a friend has recommended for pregnancy-associated discomfort, will probably also be covered by Ms. Schifferli's insurance, thanks to a change made to the Swiss Federal Constitution in 2009 regarding complementary medicine. Since Ms. Schifferli carries private insurance in addition to her basic benefit package, she can expect to have a single room as an inpatient and to be seen by a senior physician. When she has her second ultrasound, she's informed about the possibility of prenatal diagnosis, but insurance would not cover it since she's under 35 and doesn't have an elevated risk of bearing a child with a genetic disease.

Ms. Schifferli can choose from various childbirth settings: the university hospital, several city and private hospitals, or her home; a local midwife-led birthing center had to close down, since reimbursement rates made it unsustainable. Ms. Schifferli attends information sessions at various hospitals and is impressed by their hotel-like amenities — but taken aback to hear a senior physician speaking positively about elective caesarean sections, which she's heard are becoming far too common.

After her uncomplicated vaginal delivery at the city hospital close to where she lives, Ms. Schifferli is grateful for her midwife's visits, since she's worried about not having enough milk for the baby. But everything turns out to be fine. She receives 14 weeks of paid maternity leave.

MYOCARDIAL INFARCTION

A 55-year-old man with no other serious health conditions has a moderately severe myocardial infarction.

Feeling unwell, Mr. Aubry leaves work early. When he has severe chest pain, shortness of breath, and cold sweats, his wife calls an ambulance, which arrives at their suburban home 10 minutes later. Ms. Aubry is glad they no longer live in their parents' village in the Alps, although air rescue operates there quite swiftly these days.

The emergency team quickly diagnoses an ST-segment elevation myocardial infarction, so Mr. Aubry receives oxygen, aspirin, and pain medication and is taken to the nearest catheter laboratory. The laboratory has already received the ECG data, and the percutaneous coronary intervention (PCI) team is ready to receive the patient. Within an hour after the ambulance arrived at his home, Mr. Aubry has received several stents.

In a way, Mr. Aubry is lucky because he's male: in Switzerland, 7% of men with myocardial infarctions die in the hospital, as compared with 13% of women. The reasons are uncertain and probably complex, but it's known that women reach the hospital an average of 80 minutes later than men and are less likely to receive thrombolysis or PCI. Overall, the rate of percutaneous revascularization has increased significantly, from 6.0% of all patients discharged after acute myocardial infarction in 1998 to 42.4% in 2006 — provoking debate about the possible overuse of invasive and costly coronary angiography.

After an uncomplicated course of reperfusion therapy, Mr. Aubry stays in the hospital for a few days. He begins receiving a combination of cardiovascular drugs, which his cardiologist and general practitioner, both of whom are part of the physician network he's chosen for his regular medical care, are informed about.

Mr. Aubry's discharge is followed by several weeks of rehabilitation, in which he focuses on reducing cardiovascular risk factors primarily by quitting smoking and starting to exercise regularly. Three weeks after the event, he is back at work.

discourse. Marked differences in access to care are tolerated only with regard to amenities such as single-room occupancy in hospitals or services such as dental care.

The Swiss health care system is confronting a number of challenges. The first is the changing demographics of the population: the requirements of an aging society reinforce the need to provide a well-coordinated continuum of care, including social services and nursing care. Costs are also an issue: in 2013, private nursing care cost the country 3.55 billion francs (about $3.90 billion). With growing numbers of women in Switzerland working outside the home, the elderly will increasingly need to rely on external services. Insurance for long-term care, however, is still in its infancy. In addition, health care personnel are becoming increasingly scarce: as baby boomers retire in the years to come, it will be challenging to recruit the personnel to replace them. Already, 30% of all physicians working in Switzerland are non-Swiss.

Another concern is overtreatment. Because of the comprehensive benefits package of the mandatory health insurance scheme and the high density of health care resources, there is evidence of supply-induced overconsumption. But highly successful physician networks, which are becoming increasingly popular, may be able to set a new trend, emphasizing the compatibility of high-quality care with responsible stewardship of precious public resources. The reports of the Swiss Medical Board, a new independent health-technology–assessment organization that provides analysis and recommendations on the clinical effectiveness and cost-effectiveness of existing and new interventions, offer helpful reference points for medical decisions and policy debates. For inpatient care, DRGs were introduced into the payment system in 2012 as an incentive for greater cost-efficiency. It remains to be seen, however, whether the economic pressure perceived by hospital physicians will lead to compromises in the quality or equity of patient care.[4]

Third, creating a better database for a learning health care system has been identified as an important step for the future. Current evidence on the quality and equity of health care delivery is still patchy; the relevant information is neither systematically recorded nor uniformly quantified.[5] There are plans for a large publicly funded program for health services research, as well as for a national network for quality in health care, with the goal of improving out-

comes and making quality more transparent to the public, providers, and policymakers. Making greater use of e-health tools — especially electronic medical records — is also high on the political agenda.

Overall, the Swiss health care system is costly and has room for improvement, particularly in terms of accountability for the quality, appropriateness, and cost of health care services. Yet by and large, it has served the Swiss population very well. The combination of "liberalism," in the classic European sense, and solidarity — of respecting choice, autonomy, and individual responsibility while not letting anyone in need of health care suffer or die for lack of financial resources — seems to work, at least for Switzerland.

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From the Institute of Biomedical Ethics and History of Medicine, University of Zurich, Zurich (N.B.-A.), and the Global Health Program, Graduate Institute, Geneva (T.Z.) — both in Switzerland; and the Harvard School of Public Health, Boston (T.Z.).

1. OECD/WHO. OECD reviews of health systems: Switzerland 2011. OECD Publishing (http://dx.doi.org/10.1787/9789264120914-en).
2. De Pietro C, Crivelli L. Swiss popular initiative for a single health insurer . . . once again! Health Policy 2015;119:851-5.
3. Reinhardt UE. The Swiss health system: regulated competition without managed care. JAMA 2004;292:1227-31.
4. Faessler M, Wild V, Clarinval C, Tschopp A, Faehnrich JA, Biller-Andorno N. Impact of the DRG-based reimbursement system on patient care and professional practise: perspectives of Swiss hospital physicians. Swiss Med Wkly 2015;145:w14080.
5. Health 2020: the Federal Council's health-policy priorities. Bern, Switzerland: Federal Department of Home Affairs, 2013.

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Ending the HIV–AIDS Pandemic — Follow the Science

Anthony S. Fauci, M.D., and Hilary D. Marston, M.D., M.P.H.

Related article, p. 2237

In July 1996, researchers, policymakers, and activists involved in the fight against HIV–AIDS met in Vancouver, Canada, for the 11th International Conference on AIDS. During that historic meeting, practitioners and patients heard evidence regarding a powerful weapon to stop the relentless onslaught of the human immunodeficiency virus (HIV): combination antiretroviral therapy (ART), with a protease inhibitor as the centerpiece of the regimen. In the nearly 20 years since that watershed meeting, the early promise of durable effects from combination therapy has been realized for many patients: between 2000 and 2014, the rollout of ART saved an estimated 7.8 million lives worldwide.

Despite this success, the timing of ART initiation has remained the subject of intense debate. As with any therapy, clinicians and their patients weighed ART's benefits against its risks, and the results of that calculus seemed to depend on the patient's stage of illness. Specifically, evidence supporting treatment later in the course of HIV infection, when the CD4+ T-cell count fell below a certain critical level, seemed far stronger than that supporting early treatment (particularly given the toxic effects associated with the first approved antiretroviral drugs). Today, a series of well-designed efficacy studies conducted over a period of more than a decade has fundamentally changed this discussion.

In addition, researchers continue to accrue promising data on the concept of using ART for HIV prevention in HIV-negative persons — preexposure prophylaxis (PrEP). Findings from the landmark Intervention Préventive de l'Exposition aux Risques avec et pour les Gays (IPERGAY) study, now reported in the *Journal* (pages 2237–2246), demonstrate the safety and efficacy of "on-demand" PrEP for men who have sex with men and transgender women (persons who are born male but identify as female), who are at high risk for HIV infection. In this study, persons who took PrEP in an event-driven manner around the time of sexual activity were 86% less likely to acquire HIV infection than those taking placebo.

Taken together, these studies have shown definitively that the benefits of prompt initiation of ART — regardless of the CD4+ T-cell count — outweigh the risks, for both the infected person and uninfected sexual partners and that PrEP can be implemented in a way that is both acceptable to patients and safe and effective in blocking HIV transmission.

With regard to ART initiation, three critical questions were asked and answered by a "trifecta" of large international randomized, controlled trials over the course