

# Consumer-Driven Health Care Lessons From Switzerland

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**T**HE UNITED STATES IS EMBARKING on a new consumer-driven health care (CDHC) system that enables enrollees to tailor insurance plans to their needs—varying characteristics such as prices, benefits, and coverage—and providers to freely innovate their services and quote their prices. By 2003, more than 1 million people were enrolled.<sup>1</sup>

Advocates note that little consumer-driven competition presently exists in the US health care system.<sup>2</sup> Elsewhere in the highly productive US economy, consumers select their purchases from many suppliers who freely quote their prices and design their services. The resulting competition moderates costs and improves quality.

In contrast, the US health care system is dominated by third parties, employers and insurers who perform the functions normally fulfilled by consumers and suppliers. Employers select insurance plans, often offering only 1 policy,<sup>3</sup> and insurers determine providers' reimbursement. Current US health insurance plans are largely the same, differing primarily in the price paid for accessing providers, with lower prices for a tightly controlled network compared with a looser one. Providers are also constricted. Typically, large insurers, such as the government's Medicare, unilaterally determine reimbursement.<sup>4</sup> Innovators in care delivery and technology must deal with daunting bureaucracy to obtain coverage and payment.

**See also p 1227.**

**Switzerland's consumer-driven health care system achieves universal insurance and high quality of care at significantly lower costs than the employer-based US system and without the constrained resources that can characterize government-controlled systems. Unlike other systems in which the choice and most of the funding for health insurance is provided by third parties, such as employers and governments, in the Swiss system, individuals are required to purchase their own health insurance. The positive results achieved by the Swiss system may be attributed to its consumer control, price transparency of the insurance plans, risk adjustment of insurers, and solidarity. However, the constraints the Swiss system places on hospitals and physicians and the paucity of provider quality information may unduly limit its impact. The Swiss health care system holds important lessons, including evidence about its feasibility and equity, for the United States, which is now embarking on its own consumer-driven health care system.**

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Because of the recent introduction of CDHC in the United States, empirical evidence for its efficacy is short-term to date. A study by iPlan, a UnitedHealth Group company, followed the utilization of 20 000 specific individuals from legacy plan design to new CDHC plan and compared them with 25 000 who remained in a legacy plan. The method was designed to remove selection bias, eliminate a "buy-down effect" due to plan changes, adjust for network discounts, and isolate the impact of contribution strategy. The results were that CDHC enrollees engaged more: there was 33% higher registration on health information sites and more than 15% higher call center volume (from 300 to 1000 online inquiries per week for balances in their health savings accounts), and 85% of 2003 enrollees carried a balance into 2004. Furthermore, consumers acted more thoughtfully—with a 13% reduction in outpatient surgeries and radiology visits, 15% in specialist visits, 9% in

primary care visits, and 15% in laboratory services; the preferred, in-network health care professionals were used more than 90% of the time; and consumers used the emergency department more appropriately. In addition, use of preventive care services increased 8% (Thomas Policelli, MBA, UnitedHealth Group, written communication, June 2004).

United States employers—the primary sources of health insurance for nonelderly persons—and clinicians hampered by the rapid adoption of managed care worry that CDHC may

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**Table 1.** Sources of Payments for Health Care—Switzerland and United States, 2000<sup>30-32</sup>

	Switzerland, %	United States, %
Consumers	68.2	23.3
Government	25.4	44.5
Employer or other*	6.4	32.2

\*Private health insurance paid by employers and other private funds in the United States; health insurance, casualty insurance, and other private funds in Switzerland.

also not live up to its promises.<sup>5-8</sup> Pessimists view the impact of consumer engagement as a one-time gain after which typical cost trends will reemerge. Optimists believe that consumer engagement has only just begun and will increase as individuals gain access to greater choice of plans and data about the quality and efficiency of care.

Switzerland, the only developed country with a long-standing CDHC system, provides some evidence and important lessons about its efficacy. The Swiss have considerable experience with some of the consumer-driven insurance policies newly introduced in the United States, such as those with high deductibles, and it is Swiss consumers who purchase insurance, not employers or governments. However, the lessons are limited because the Swiss system is not a complete model of CDHC; demand is constrained by mandated benefits and supply by uniform prices, and information about quality of providers is nonexistent.

The Swiss lesson is generally a positive one. Switzerland provides universal coverage at substantially lower cost than the United States while avoiding the quality, responsiveness, equity, and provider compensation concerns of single-payer universal health care systems.<sup>9-13</sup> However, perhaps because of its constraints, inefficiencies remain.

We compare the characteristics of the Swiss and theoretical CDHC systems and analyze their effects on its successes and missed opportunities.

### CDHC CHARACTERISTICS

Consumer-driven health care combines free demand and supply, trans-

parency, and active governmental oversight. It could create a competitive market that increases efficiency, effectiveness, and access to care in the following ways<sup>14</sup>:

#### Freeing Demand

Consumers buy health insurance plans. (Although consumers may *receive the funds* from an employer or a government, it is they who *buy*.) Also, consumers know the full cost. Control of purchases and transparency of costs enable consumers to obtain what they consider as “good value for the money.”

#### Freeing Supply

Insurers freely design and price insurance plans, and providers freely design and price their services. Insurers and providers can compete with innovative products and services that offer “good value for the money.”

#### Enhancing Market Efficiency

Consumers have excellent information about the quality and cost of insurers and providers. Information is key to consumer markets. For instance, information likely helped the cost and quality of US cars to improve. As consumer publications translated technical test results into user-friendly data, informed buyers caused manufacturers to transform yesterday's unsafe, high-maintenance vehicles into safer, more reliable cars. For example, the market share of Japanese cars, generally highest rated by consumer publications, moved from 7% in the 1970s to 35% in 2002.<sup>15</sup> Because higher-quality vehicles have fewer failures, they cost less and, thus, more people can afford them.<sup>16</sup> While the consumer price index rose by 136% for all items from 1990 to 2001, it increased by only 117% for new cars.<sup>17</sup>

Information about the outcomes of specific health care providers may help achieve similar improvements.<sup>18</sup> For example, the CDHC features developed by an employer coalition in Minneapolis–St Paul, Minn, the Buyers Health Care Action Group—consumer control, provider freedom to set price, and availability of satisfaction information—

helped to cause a nearly 20% drop in enrollment in high-cost/low-satisfaction plans and a 50% increase in low-cost/high-satisfaction plans.<sup>19</sup> In addition, 3 years after New York State required data about death rates for open-heart surgery (adjusted for patient severity of illness), it attained the country's lowest mortality rates.<sup>20,21</sup> Although the causes for the decline are debated, disclosure motivated some low-performance providers to revamp their protocols. Market share growth was inversely related to the mortality statistics.<sup>22-24</sup> And, in health care, too, higher quality controls costs and, thus, enables more access to care.<sup>25-27</sup>

#### Providing a Safety Net

Government subsidizes the poor and protects consumers. In most democratic societies, government subsidizes health insurance for the poor and regulates anticompetitive groups, incompetent providers, and fraudulent, undercapitalized insurers.

### THE SWISS CDHC SYSTEM

Switzerland's CDHC system mirrors the country's traditional independence and solidarity because citizens may freely choose plans, and because it subsidizes the needy.<sup>28</sup> But it more closely mirrors its European neighbors' centrally controlled health care systems in the constraints placed on insurers and providers.<sup>29</sup> The Swiss health care system frees demand much more than supply.

#### Freeing Demand

Unlike in the United States, in Switzerland consumers, not employers or the government, primarily pay health care expenses through insurance premiums and uninsured expenses (TABLE 1), but demand is constrained by mandated benefits. The compulsory health insurance policy covers essential benefits, such as hospital care, and some benefits considered optional elsewhere, such as health spas. Compulsory benefits have grown over time. Insurers may also offer supplementary policies for benefits such as private hospital rooms or child care for sick parents.<sup>33</sup>

Despite their mandated benefits, compulsory policies may be differentiated in other ways. Their features include high deductibles, health maintenance organizations (HMOs) that tightly manage access, and bonus plans that reward enrollees who do not use insurance by reducing premiums over 5 years. The policies vary substantially in price. For example, average 2003 premiums ranged from \$119 per month for a high-deductible policy to \$159 for an HMO and \$199 per month for a low-deductible plan.<sup>34</sup> Supplementary plans are even more differentiated. For example, one policy contains a nonsmoker option with savings of up to 20%. Since its introduction in 1995, the option has attracted about 30% of the insurer's new members.<sup>35</sup> The Swiss are further exposed to health care costs because no insurance plans offer complete coverage and they may not buy insurance for these out-of-pocket payments.

### Freeing Supply

The Swiss system permits insurance companies, physicians, and hospitals far less freedom than enrollees.

**Physicians.** Physicians' fees are negotiated between their association and the Swiss insurance association. Physicians can bill compulsory enrollees only for services included in their health insurance and may not supplement their bills.

**Hospitals.** In 1999, 249 public or publicly subsidized and 143 private hospitals existed. They too have limited pricing freedom. Public and some private nonprofit hospitals are operated by their canton in municipalities, independent foundations, or organizations. They are guaranteed deficit coverage and/or subsidies from public funds within negotiable limits. Private hospitals are financed solely by negotiated payments from health insurance companies and patients. They may be organized as for-profit or nonprofit.<sup>36</sup> The private hospitals' higher rates for hotel costs and services are covered by supplementary health insurance or out-of-pocket payments.

Enrollees in only compulsory insurance must seek care first in hospitals on the cantonal list. In some cantons, only those with supplementary insurance may freely access private hospitals.

**Health Insurers.** In 2003, there were 93 insurers in Switzerland, from 51 to 72 in each canton. Although some are centuries old, new entrants exist; for example, Helsana, the country's largest insurer, formed 2 new insurers in 2003 that offer more innovative services and lower premiums.<sup>37</sup>

The prices and benefits of compulsory insurance are tightly controlled. Prices are adjusted only for the enrollees' canton and age and the urbanization of their residence. Only nonprofits may offer it. Insurers can reject supplementary insurance applicants but must accept all applicants for compulsory insurance. Supplementary insurance prices may be adjusted for enrollee history, risk, and sex. These policies are typically offered by the for-profit arms of compulsory insurers.

### Enhancing Market Efficiency

Although Swiss citizens have adequate information about their insurers, they have virtually no information about providers. In 1999, about 65% of Swiss citizens rated themselves as well informed about their health care system and insurers. After the government approves new premium rates for compulsory health insurance, it publicizes them in widely reported news. More than 90% of consumers use media as sources of information, relying less on personal recommendations.<sup>38</sup> Private institutions regularly rate insurers. For example, evaluations in the journal *Beobachter* include consumer satisfaction, quality systems, financial reports, and level of required reserves.<sup>39</sup> This rating is available free online or in magazines and newsletters.

In contrast, virtually no information exists about physicians and hospitals. Although some provider benchmarking exists in Switzerland, it is not available to the public. Because consumers cannot use performance ratings to choose their physician or hos-

pital, they usually follow the advice of their general practitioner, friends, and relatives, or choose the most conveniently located provider (Peter Marbet, chief communications officer, Santésuisse [Swiss Association of Health Insurers], oral communication, September 9, 2003).

### Providing a Safety Net

Individual cantons provide tax-financed, means-tested subsidies so that low-income individuals can purchase compulsory health insurance. In 2001, 32.7% of the insured received subsidies and nearly 19.1% of enrollee premiums for the obligatory health insurance were government financed.<sup>40</sup> Subsidies are based on consumer income and assets. The maximum amount is typically the average premium in 1 canton. Some cantons subsidize consumers directly, while others pay the insurer.

The national government oversees the financial solvency of insurers and their fees. Low-deductible compulsory policies are loss leaders because of artificially low premiums. Insurers compensate with income from funds invested in the capital markets and profits from higher-deductible policies, HMOs, and supplementary insurance.

Government actions thus result in direct subsidies to the needy and, likely, indirect subsidies from purchasers of supplementary and high-deductible policies. The government also risk-adjusts compulsory insurers. Those with above-average medical care costs receive transfers from those with lower-than-average costs. The adjustment is based on the insurer's deviation from the average medical costs for enrollees in 30 different age and sex categories.<sup>41</sup>

In some ways, the Swiss system resembles the "managed competition" model. However, managed competition theorists relied on the efficacy of managed care plans, while the Swiss market contains many different kinds of insurance plans.<sup>42</sup> The largest market share is held by high-deductible plans, while managed care plans have a relatively small market share.

**RESULTS OF THE SWISS SYSTEM**

The Swiss CDHC system achieves some important, positive results. Health status is at least as high as in the United States, while costs and rates of inflation are considerably lower. Furthermore, Switzerland has universal coverage, unlike the United States, where

more than 40 million people are uninsured.

Most comparisons of US health care outcomes with those of developed European countries fail to adjust for substantial differences in the sociodemographic characteristics among them, such as levels of education and income.<sup>43</sup> Because health status is consid-

erably affected by such characteristics, the value of the comparisons in isolating the impact of the health care system on outcomes is limited. Among the socioeconomic characteristics that most affect health status are income, levels of education, and race/ethnicity.<sup>44,45</sup> To ensure fairer comparisons, we selected US states whose characteristics most closely reflect Switzerland's. To adjust for the differential costs of serving high- and low-density populations, these states also mirror Swiss population densities (TABLE 2).

Swiss health care expenses are considerably lower than those of the United States and comparable states, while outcomes for cerebrovascular disease and diabetes, which are linked to the socioeconomic characteristics we selected, are roughly equal or better.<sup>49</sup> Furthermore, competition among Swiss insurers lowered annual administrative expenses per enrollee from \$98 in 1996 to \$92 in 2001,<sup>50(p62)</sup> while in the United States, they increased (TABLE 3).<sup>53</sup> However, the Swiss generally have more of the resources typically considered in cross-national comparisons—such as hospital beds, physicians, and costly diagnostic and therapeutic equipment—than Canada, the United Kingdom, and even the United States (TABLE 4). Furthermore, Swiss physicians are well compensated, but not quite as well as in the United States.

The Swiss insurance industry may also demonstrate the viability of small insurers. The administrative economies of scale used to justify the consolidation of US health insurers are not readily apparent in Switzerland.<sup>54,55</sup> In 2000, only half of the Swiss insurance firms had more than 5000 members and only 14% had more than 100000.<sup>56(p32)</sup> Administrative costs per enrollee for insurers with fewer than 1000 members averaged \$80, while costs for those with more than 1 million members averaged \$78.<sup>56(pp88-93)</sup> (Small insurers may benefit from their superior knowledge of the health care status of the enrollees in their small territories [Peter Marbet, chief communications officer, Santésuisse, oral communication, September 9, 2003].)

**Table 2.** Sociodemographic Characteristics—Switzerland, United States, and Selected US States\*

	Switzerland	United States	Connecticut	Maryland	Massachusetts
Population per square mile, 2001	474.0	80.5	707.0	550.0	813.0
Per capita income, 2001, US \$	30 098 (2000)	35 657 (2000)	41 930	34 950	38 845
Employed, 2001, %	67.8	63.8	65.3	67.1	65.5
High school graduate or higher, 2000, %	76.0 (1999)	80.4	84.0	83.2	84.6
Non-Hispanic white, 2000, %	~96	75.1	81.6	64.0	84.5

\*References 46 (pp 23, 28, 37, 141, 426, 826, and 832), 47, 48.

**Table 3.** Health Care Outcomes and Expenses—Switzerland, United States, and Selected US States\*

	Switzerland	United States	Connecticut	Maryland	Massachusetts
Personal health care expenses per capita, 1998, US \$	2952†	4178†	4623	3870	4786
Health care expenses, % of gross domestic product, 1999	10.7	13.0	NA	NA	NA
Infant mortality rate (white) per 1000 live births, 1999	4.6	5.8	5.7	5.1	4.8
Death rates per 100 000					
Cerebrovascular disease, 1997	41.0	58.6	59.5	51.3	54.0
Diabetes, 1999	14.7 (1997)	25.1	21.1	27.5	21.9

Abbreviation: NA, data not applicable.

\*References 46 (pp 78, 83-84, 51, 52).

†Swiss and US financial data are in US purchasing power—equivalent dollars.

**Table 4.** Available Health Care Resources—Switzerland, United States, United Kingdom, and Canada<sup>48</sup>

Available Resources	Switzerland	United States	United Kingdom	Canada
<b>Hospitals, 2000, per 1000 Population</b>				
Total inpatient beds	17.9	3.6	4.1	3.9 (1999)
Acute care hospital beds	4.1	3.0	3.3	3.3
Psychiatric hospital beds	1.2	0.3	1.0 (1998)	0.5 (1999)
<b>Physicians, 1999, per 1000 Population</b>				
Practicing physicians	3.4	2.8	1.8	2.1
<b>Equipment, 1999, per 1 Million Population</b>				
Computed tomography scanners	18.5	13.6	6.1	8.2 (1997)
Magnetic resonance imaging units	13.0	8.1	3.9 (2000)	2.5 (2000)
Radiotherapy equipment	11.2	4.1	4.8 (2000)	7.0 (1997)
Lithotriptors	3.9	2.7	NA	0.5 (1997)

Abbreviation: NA, data not applicable.

Yet, in comparison with the United States, inefficiencies exist in resources, such as number of physicians and hospitals, and, perhaps, in hospital admission rates and lengths of stay (Table 4 and TABLE 5). These results may be attributable to the characteristics of compulsory insurance policies. For example, because deductible levels of compulsory insurance are low relative to income, hospital patients may be less sensitive to admission rates and lengths of stay. In 2000, 63.7% of consumers' payments were for insurance premiums (about 42.7% of total health care costs), 8.1% for deductibles and co-payments (about 5.4% of total costs), and 28.2% for all other out-of-pocket payments, such as over-the-counter drugs (18.9% of the total).<sup>50(pp147,148)</sup>

Public hospitals may also contribute to inefficiency because they are sheltered from competition, with budgets substantially granted from government sponsors, rather than earned in the marketplace, and from compulsory insurance enrollees who are motivated to use public hospitals before admission to private ones. Finally, the expansion in mandatory benefits, which grew by nearly one third from 1985 to 1995,<sup>28</sup> compromises the consumer-driven aspects of the system.

**ANALYSIS OF CDHC**

Many missed opportunities and successes are linked directly to the characteristics of the Swiss system.

**Successes**

**Cost Control and Consumer Responsiveness.** Cost control may be attributable to the Swiss consumers' significant role in health care payments and the resulting cost transparency. Insurers compete for enrollees through differentiated health plans offered at varying prices and services. In 1999, plans with higher deductibles are characterized by significantly lower use of health care resources. For example, the paid benefits, including risk adjustment, for a \$1110 deductible policy were 60.0% lower than those for a regular deduct-

ible, while bonus and HMO plans were 32.6% lower.<sup>57(p71)</sup>

Consumer control also helps achieve consumer responsiveness, a challenge for many health care systems. In a recent survey, consumers in centrally controlled United Kingdom voiced the highest level of patient dissatisfaction and those in consumer-driven Switzerland, generally, the lowest (TABLE 6).<sup>59</sup>

**Universal and Equitable Access.** This success is caused by the requirement to purchase insurance, prohibition against rejection of any applicant by compulsory insurers, and government subsidization of the needy and risk adjustment of insurer revenues.

Across all income categories, the Swiss rate their health status as relatively high, as shown in TABLE 7.

**Substantial Reimbursement for Physicians and Hospitals.** Because enrollees are the primary source of payment, the prices for physicians and other clinicians may more readily reflect their views of "value for the money," rather than those of employers or government officials.

**Missed Opportunities**

**Inefficiencies in the Provider Sectors.** One reason inefficiencies exist is because innovations in the delivery of care are constrained by payments tied

**Table 5.** Hospital Beds, Length of Stay, and Admissions and Physician Visits—Switzerland, United States, and Selected US States\*

	Switzerland	United States	Connecticut	Maryland	Massachusetts
Hospital beds per 1000 population, 2000	4.1	3.0	2.3	2.6	2.1
Average length of inpatient stay, 1999, d	12.8	7.0	NA	NA	NA
Hospital occupancy rates, 2000, %	86.6	64.0	75.0	63.6	70.9
Admissions per 1000 population, 2000					
Acute care	136.1	117.6	NA	NA	NA
Inpatient care	154.5	124	NA	NA	NA
Physician visits per capita, 1997	3.9	5.8	NA	NA	NA

Abbreviation: NA, data not applicable.  
\*References 46(pp 22, 111)-49, 52, 58

**Table 6.** Dimension Scores—Problem Ratings Reported by Patients on Specific Aspects of Hospital Care, 1998-2000<sup>59</sup>

Dimensions of Care*	Switzerland	United States	Germany	Sweden	United Kingdom
Information and education	16.7	25.2	20.4	23.4	28.7
Coordination of care	13.1	21.7	17.2	...	21.9
Physical comfort	2.6	10.1	6.7	4.0	8.3
Emotional support	14.7	26.8	21.9	26.0	27.1
Respect for patient preferences	15.6	19.9	17.9	21.2	30.7
Involvement of family and friends	11.5	19.3	16.6	14.6	27.5
Continuity and transition	30.0	28.4	40.6	40.2	45.1

Abbreviation: Ellipses indicate not included in Swedish surveys.  
\*Each dimension is scored from 0 (no reported problems) to 100 (all items coded as a problem).

**Table 7.** Self-reported Health Status by Income Class<sup>60\*</sup>

	Income Class, US \$†			
	0-1851	1852-2465	2466-3457	≥3458
Share of population, %	21.3	15.9	30.6	27.6
"Bad" self-reported health status, %	18.7	17.2	13.8	10.5

\*Among Swiss men aged 25 years or older.  
†Equivalence-adjusted monthly income.

to specific benefits. For example, in the United States, Duke University Medical Center's integrated program for congestive heart failure improved health status and reduced hospitalization, saving more than \$8000 per person per year.<sup>61</sup> But because the Swiss system has no reimbursement category for such programs, hospitals that adopted it would lose money. Also, public hospitals, assured of clientele and government budgets, have fewer incentives for efficiency. Finally, differential subsidies may distort treatment. For example, hospitals might admit patients to a ward because inpatient care receives public subsidies, unlike outpatient and short-stay inpatient care.

**Bias Against the Sick.** Because the Swiss risk adjustment is based only on sex and age, variables with limited capacity to account for differences in risk, incentives for skimming remain. Ignor-

ing applicants with high risks or motivating insurance brokers aggressively to target selected risk groups is profitable. Some have reportedly even tried to persuade high-risk consumers to switch or refused them, in violation of the law.<sup>62</sup>

**Distorted Utilization and Enrollment Patterns.** The Swiss health insurance system has produced innovative plans, a feature especially notable in such a small market, but some design flaws appear. For example, if reductions in length of stay were desired, a policy with a higher co-payment (currently only \$7/d) may cause more reductions than one with a high deductible. Similarly, a bonus policy with a higher payout may attract more enrollees.

**LESSONS ABOUT EQUITY AND FEASIBILITY OF CDHC**

There are many concerns about CDHC.<sup>63,64</sup> The Swiss health care sys-

tem provides information about some of them.

- “Fraudulent insurers will injure consumers in an individual health insurance market.” Individuals in the Swiss system can safely and effectively buy insurance. For structural and income tax reasons, the current US CDHC models rely primarily on choices presented by groups of employers and governments, rather than purchases in the individual market.<sup>65</sup> However, the recently enacted individual US health savings account and tax-credit legislation, which extends tax-supported purchases and savings to individuals, may alter this situation.<sup>66</sup>

- “CDHC will end health insurance. Healthy persons will not buy it and sick persons will not be able to afford it.” The Swiss system requires universal coverage. Prices to individuals are not risk adjusted. Instead, centralized risk adjustment is applied to insurers.

- “Sick persons will not receive adequate care in a CDHC system.” Sick persons, fully insured in Switzerland, have excellent prognoses, as shown in TABLE 8, which compares Switzerland with similar countries.

- “CDHC will create multiple tiers of care, with the poor relegated to the worst.” The quality of Swiss health care is differentiated primarily by amenities, such as a semiprivate hospital room. As TABLE 9 indicates, differences in health care utilization by income class are not substantial.

- “Residents in low-density population areas will be denied access to insurance and/or care.” Although the size of most US rural areas dwarf those in Switzerland, some Swiss insurers specialize in rural areas, where, presumably, they earn sufficient profit to compensate for their smaller scale. Anecdotal evidence indicates that shortages of care do not occur there.<sup>68</sup>

- “Healthy persons will self-select into high-deductible plans and HMOs, thus causing a financial death spiral for the insurers who enroll sick persons, especially small insurers, who cannot rely on large numbers of enrollees to average their costs. These problems will

**Table 8.** Potential Years of Life Lost to Diabetes and Myocardial Infarction, Life Expectancy, and Infant and Maternal Mortality—Canada, Switzerland, United Kingdom, and Germany<sup>48,67</sup>

	Canada	Switzerland	United Kingdom	Germany
Potential years of life lost per 100 000 population aged <70 y, 1997				
All causes	3803.3	3619.3	3951.5	4164.4
Diabetes	50.8	27.7	28.9	42.9
Acute myocardial infarction	184.9	122.6	248.4	239.5
Malignant neoplasm of colon	76.0	63.0	79.5	90.6
Malignant neoplasm of breast (among women only)	211.2	202.7	262.6	231.6
Malignant neoplasm of prostate (among men only)	27.0	25.7	28.9	27.9
Infant mortality per 1000 live births, 1999	5.3	4.6	5.8	4.5
Maternal mortality per 100 000 live births, 1998	3.8	3.8	7.0	5.6
Life expectancy, y				
Total population at birth, 1999	79.0	79.7	77.4	77.7
Disability-adjusted total population at birth, 1997/1999	72.0	72.5	71.7	70.4
Men at age 65 y, 1997	16.3	16.5	15.1	15.2

**Table 9.** Access to Health Care, by Income Class<sup>60\*</sup>

	Income Class, US \$†			
	0-1851	1852-2465	2466-3457	≥3458
Share of population, %	21.3	15.9	30.6	27.6
Physician visit in past 3 mo, %	39.8	40.9	40.6	38.3
Admittance to hospital in past 12 mo, %	13.3	12.8	13.5	10.1
Use of prescription drugs in past 7 d, %	24.4	25.1	25.7	24.5
≥1 Mammography, %	36.4	38.7	39.5	38.0

\*Among Switzerland men aged 25 or older, except mammography data, among Switzerland women aged 25 or older.  
†Equivalence-adjusted monthly income.

limit the number of insurers and thus the competition that undergirds CDHC.” The risk-adjustment payment from high-deductible plans and HMOs exceeds that in lower-deductible plans, indicating sicker enrollees in the lower-deductible ones, but risk adjustment reduces the impact of this adverse selection. For example, in 1999, on average \$510 per enrollee in a \$1110 deductible plan was removed from insurers and \$174 per enrollee in a regular deductible plan was transferred to insurers.<sup>57(p65)</sup> Overall, even small insurers achieve sufficient profits to remain in business. In 2000, insurers with fewer than 700 members had built up more than the required reserves, as a percentage of income, and frequently earned greater profits per enrollee than those with a million or more members.<sup>56(p49)</sup>

## LESSONS FOR THE UNITED STATES

(1) To attain universal access, it is necessary to require individual purchase of health insurance of all and provide financial subsidies for enrollees who cannot afford premiums. Switzerland’s health care system maintains the status of the private sector insurers and the mixture of public and private providers that characterize the US system. But it grants government new powers to require the purchase of health insurance, mandate benefits, affect pricing, and transfer tax revenues to individuals to enable universal coverage. In the US context, further research is needed to determine the political feasibility of these new governmental powers, which requirements should emanate from the federal and/or state levels of government, and the likely receptivity of Americans to requirements that they purchase health insurance and of insurers and providers to measurement of their quality.

(2) To attain cost control and consumer responsiveness, it is necessary to permit considerable experimentation in insurance policies’ coverage, benefits, and terms, and allow risk-adjustment of insurers to reflect the enrollees’ risk

status, as the Swiss system attempts to do.

(3) In avoiding reluctance to insure the sick, risk adjustment can achieve 2 crucial goals: willingness to insure and provide services to the sick and financial viability of insurers and providers for the sick. If the Swiss risk adjustment does not completely achieve the first of these goals, a consortium of insurers, overseen by independent auditors, could perform the analysis. Their massive claims databases and analytic competencies could enable them to improve the processes of risk adjustment. In the US employer-based system, insurers could quote risk-adjusted prices to employers or other groups. Insurers whose risk-adjusted prices were excessively conservative and high would lose customers. Conversely, if they were too liberal and low, they would lose money. This area requires further research on both the methods and processes of risk adjustment.

(4) To reward efficient, effective providers, it is necessary to permit health care providers to innovate freely in the delivery of health care and its pricing (eg, permit them to adjust their prices to insurers for the risk of consumers, as overseen by governmental strictures against price gouging and discrimination). Providers will thus be motivated to innovate in health care services for the sick and to earn revenues by responding to consumer demand rather than relying on guaranteed budgets or clients.

(5) Over time, the growth in compulsory benefits has absorbed an increasing fraction of the consumers’ payment, thus compromising the consumer-driven aspects of the Swiss system. To avoid growth in compulsory benefits, it is necessary to require coverage in terms of dollars, not benefits; for example, require insurance for all health care expenses exceeding a certain amount, rather than specific benefits.

(6) To increase flow of information to consumers, it is necessary to require reporting and dissemination of risk-adjusted results for physicians, hospi-

tals, and other health care providers by type or procedure, problem, and disease, over time.<sup>69</sup>

## CONCLUSION

Switzerland’s universal-coverage health care system consumes a larger fraction of gross domestic product than most other countries, likely reflecting its citizens’ preferences and resources. Health care expenditures are closely linked to income.<sup>70</sup> Yet, in contrast with the United States, whose health care expenditures are the highest percentage of gross domestic product in the world and where more than 40 million citizens are uninsured, the consumer-driven Swiss health care system achieves 30% lower per capita health care costs and universal coverage while providing reasonable quality of care.<sup>48</sup> These results can be attributed primarily to the control exercised by Swiss consumers and the relatively high cost transparency of the system, requirement for universal coverage, and risk adjustment of insurers. Additional savings would likely be attained with liberalization of provider coverage and reimbursement policies.

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*Study concept and design:* Herzlinger.

*Acquisition of data:* Herzlinger, Parsa-Parsi.

*Analysis and interpretation of data:* Herzlinger, Parsa-Parsi.

*Drafting of the manuscript:* Herzlinger, Parsa-Parsi.

*Critical revision of the manuscript for important intellectual content:* Herzlinger, Parsa-Parsi.

*Statistical analysis:* Herzlinger, Parsa-Parsi.

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