

HEALTH AND HEALTH CARE INEQUALITIES IN SWITZERLAND: A BRIEF REVIEW OF THE LITERATURE

Alberto Holly
and Mohamed Benkassmi

**Draft paper prepared for the RUIG/UNRISD project on
Globalization, Inequality and Health,
a collaborative international project forming part of the
RUIG research programme on The Social Challenge of Development**

November 2003

Acknowledgements

The authors are at the Institut d'économie et management de la santé (IEMS), University of Lausanne, Champ de l'Air, Bugnon 21, 1005 Lausanne, Switzerland.

Financial support from both RUIG and UNRISD is gratefully acknowledged. We would like to thank Maureen Mackintosh for her remarks and criticisms which led to the improvement of a preliminary version of this paper. All remaining shortcomings or errors are our responsibility alone.



The **United Nations Research Institute for Social Development (UNRISD)** is an autonomous agency engaging in multidisciplinary research on the social dimensions of contemporary problems affecting development. Its work is guided by the conviction that, for effective development policies to be formulated, an understanding of the social and political context is crucial. The Institute attempts to provide governments, development agencies, grassroots organizations and scholars with a better understanding of how development policies and processes of economic, social and environmental change affect different social groups. Working through an extensive network of national research centres, UNRISD aims to promote original research and strengthen research capacity in developing countries.

Current research programmes include: Civil Society and Social Movements; Democracy, Governance and Human Rights; Identities, Conflict and Cohesion; Social Policy and Development; and Technology, Business and Society.

A list of the Institute's free and priced publications can be obtained by contacting the Reference Centre.

UNRISD, Palais des Nations
1211 Geneva 10, Switzerland

Tel: (41 22) 9173020
Fax: (41 22) 9170650
E-mail: info@unrisd.org
Web: <http://www.unrisd.org>

Copyright © United Nations Research Institute for Social Development (UNRISD).

This is not a formal UNRISD publication. The responsibility for opinions expressed in signed studies rests solely with their author(s), and availability on the UNRISD Web site (<http://www.unrisd.org>) does not constitute an endorsement by UNRISD of the opinions expressed in them. No publication or distribution of these papers is permitted without the prior authorization of the author(s), except for personal use.

1 INTRODUCTION

The purpose of this survey is to present an overview of the published literature on inequalities in health and health care in Switzerland. The intent is to cover the major issues of inequality in health status, health care delivery, health care financing, and relationships between social inequality and inequality in health. In relation to “globalisation”, the analysis will examine the impact of Swiss migration policy on health inequality.

In relation to the topic of this survey, it is important to bear in mind that health care spending in Switzerland is particularly high. A comparison with health care spending in other countries puts Switzerland in second place, behind the USA both in absolute per capita terms and as a share of gross domestic product (GDP). In 2001, health care spending in Switzerland amounted in absolute per capita terms to 3248 dollars (4887 dollars in the USA), and to 10.9% of GDP (13,9% in the USA)^a. These expenditure levels reflect, in part, the high level of per capita income in these countries. However, they may also mean high average level of services, high resource costs of services or inefficient provision of services.

Beside these considerations, equity questions need to be raised, since global reasoning (or in terms of averages) does not address distributional issues such as: are people getting the care that they need? Who face barriers in obtaining health care? In this survey, we will be interested not only in the resident population, but also in the situation of migrants, asylum seekers and refugees in Switzerland. A large part of this paper is devoted to this issue as it is one of the important aspects in Switzerland, as well as in other countries, of so-called “globalisation” in relation to health.

At the outset, it should be mentioned that the nature of the Swiss indicators are quite peculiar as we usually find good health status indicators and low inequality indicators relative to the other comparable countries. This is a striking finding given the private nature of the health insurance system.

It is also important to bear in mind that Switzerland experienced in 1996 an important change in the regulation of health insurance. Before 1996, when the Health Insurance Law (LAMA) was in force, health insurance was not compulsory, and this introduced inequalities in the health care system despite the fact that approximately 99 per cent of the population was insured in the early 1990s. For example, the optional nature of the health insurance system resulted in higher premiums for those who joined at a later age, and women's premiums were higher than men's at the same age. In addition the LAMA authorized private firms or public administrations to conclude collective supplemental insurance for all the personnel, and this particular feature of the health law was an important source of inequity.

One of the main purposes of the New Health Insurance Law (LAMaI) in force since 1996 was not only to make health insurance compulsory, but also to correct for these inequalities under the LAMA as we explain in detail in this paper. However, some aspects of the LAMaI itself may be at the origin of new sources of inequity in the health care distribution. To take only one example, within a given sickness fund, premiums contributions are community-rated (i.e. the same) to all their adults over the age of 25 living in the same canton. This means that premium contributions charged by a sickness fund are the same for all members and cannot be graded according to age and gender nor according to the income of the insured person. Given the compulsory nature of the health insurance, health insurance premiums are similar to taxes which

^a Source: Organization for Economic Cooperation and Development (OECD), Health Data 2003.

do not depend on income. This naturally raises the question of the regressive financing of health care and puts a question mark over equity of access to care in relation to need under the LAMal.

In Switzerland, health care use inequality is rather a recent issue of research and concern. Most of the studies we present have been published after the mid-eighties. In one of the earliest publications on this issue, Lehmann, Martin and Gutzwiller (1986) argue that the political class in Switzerland did not recognize inequality in health as a problem, because of supply abundance, and the fact that the individual is seen to be responsible for his or her health (life style, health insurance, and her or his way to have health care). As this survey will show, Switzerland is not as safe from health and health care inequalities as it is often stated. Note, however, that a serious difficulty, specific to Switzerland, has to be taken into account. Most of the work presented in this survey corresponds to a period where the LAMal was not in force. It is fair to say that, despite the research work that has been undertaken on the impact of LAMal on the health care system, there is still a lot to be known about its effect on health and health care inequalities in Switzerland.

Before presenting this overview, we would like to bring to the readers' attention several points which require a cautious interpretation of studies, in general, about health and health care inequalities.

First, from many point of views, including inequalities and health policy, an important distinction has to be made between health itself and health care. The nature of the relationship between health care and health is quite complex. In fact, the final output of health care is not "health", but rather intermediary goods which are inputs for the production of health, namely health care services. In addition, as is well known, the health of individuals depends not only on health care, but also on many other biological, cultural and social factors.

Second, in terms of equity, there is also a debate about the role of health care systems: should they guarantee equal access to health treatments to all social categories, or rather do they need to correct for biological and socio-economic inequalities by providing more care to the underprivileged population?

Third, there is a related issue which is only recently highlighted in the emerging body of literature, which is the multidimensional feature of inequalities. For example, one can compare health status, or income, separately, between two people. But, when more "health" is transferred from the rich to the poor, does the overall inequality (the multidimensional inequality) decrease? How to measure the multidimensional inequality variation? In general, researchers use only one-dimensional inequality measures, distributed by socio-economic classes.^a

With all these precautions in the background, we review in this survey research and publications at the national level, as well as about international comparisons including Switzerland.

The plan of this paper is the following. In Section 2, we describe relevant aspects of the health insurance system in Switzerland. The policy followed up to now by Switzerland in the field of "Migration and Health" is summarized in Section 3. Section 4 presents work that has been undertaken around the inequality in health status, whereas Section 5 presents work on population behaviour with direct effect on health. Issues related to the health insurance system are presented in Section 6, whereas Section 7 addresses the specific issues of inequality in health care financing and the redistributive effects of health insurance. In Section 8, works which deal with inequality in the use of and access to health care are presented. Papers dealing with the importance of social environment on health and health care inequalities are discussed in Section 9. We offer an intermediary conclusion regarding the migrant population in Section 10. Some concluding remarks and suggestions for future research are

^a See, however, the work of Christian List (1999).

contained in Section 11.

Within each section, we attempted to present published articles dealing with health inequality at the national level of Switzerland as well as some international comparisons including Switzerland.^a

2 ASPECTS OF THE SWISS HEALTH CARE SYSTEM

In this section we review some of the aspects of the Swiss health system which are relevant to this study^b. We focus mainly on the aspects specific to the Swiss system, and on the changes introduced by the 1996 law on health insurance (LAMal). Before 1996, health insurance was not compulsory and introduced inequalities in the health care system. The purpose of the LAMal was precisely not only to make health insurance compulsory, but also to reduce inequalities in the previous system while maintaining the freedom of the patients and trying to control the increase in costs.

The health system in Switzerland is very complex. Health insurance is a federal responsibility while public health is essentially the competence of the cantons. The cantons are responsible for health services, preventive care and public health regulations. Each canton has in fact its own health legislation. Municipalities intervene mainly in the services to senior citizen, social assistance and home-care.

In general terms, health insurance plans are separated in Switzerland into: the "basic insurance" providing the so-called "compulsory benefit"- or "social benefits"- and supplementary insurance.

Until 1996, health insurance was not compulsory, but the Confederation encouraged it by granting subsidies to non for-profit sickness funds. Specifically, the Health Insurance Law (LAMA) fixed minimum requirements for this category of sickness funds, and defined very precisely what it is convenient to call "compulsory benefits" or "social insurance" benefits. It also required not-for-profit sickness funds to fulfill some obligations. For example, the imposition of exceptions to insurance for more than five years was prohibited, and in the event of disability, unlimited hospitalisation had to be offered. However, insurers could also establish rules regarding an age limit for admission, an initial waiting period during which the insured did not receive benefits, or a denial of benefits for five years for a pre-existing condition which recurs after admission.

As mentioned earlier, health insurance was not compulsory under the LAMA. Nevertheless, approximately 99 per cent of the population was insured. In addition, four cantons had made health insurance compulsory for the totality of the population. Some cantons had made it compulsory for some categories of the population, such as the elderly, children in age of schooling, apprentices, or people with low income. Some municipalities had also made health insurance compulsory for the totality of their residents.

For-profit sickness funds were excluded, and still are, from the "social" health insurance. Both not-for-profit sickness funds and for-profit sickness funds could provide supplementary voluntary insurance. Supplementary insurance plans vary along several dimensions: coverage of supplemental inpatient and outpatient services, coverage of allied health personnel and the payment system to care providers for each procedure or service. Note that the LAMA authorized private firms or public administrations to conclude collective supplemental insurance for all the personnel.

^a We have tried as much as possible to state with precision the data used and the methodology in the papers mentioned in this survey.

^b This review makes use of the expositions of the Swiss health system contained in OECD (1994) and Swiss Federal Social Insurance Office (1997) and reproduces in part these expositions.

The optional nature of the health insurance system resulted in higher premiums for those who joined at a later age. Also, women's premiums were higher than men's at the same age, but could not be more than 10 per cent higher. As long as s/he was affiliated to the same sickness fund, the insured used to pay therefore the premium corresponding to the age at which s/he joined and their sex, this premium increasing nevertheless with the increase of the health costs. Note that if a person was insured by a collective insurance, then the premium could be much lower than for an individual insurance. In some extreme cases, premium could differ by a factor of twelve. For example, a young person could pay a low premium per month for a collective supplemental insurance whereas a person purchasing at the age of 60 only a "basic insurance" could pay a premium twelve times higher per month.

One of the main purposes of the New Health Insurance Law (LAMal) in force since 1996 was to correct for these inequalities under the LAMa. The "basic insurance" for medical and pharmaceutical care has been made compulsory for all persons resident in Switzerland. Under the LAMal, all applicants must be accepted without any reservations. The insured can choose freely their insurer. The sickness funds can be changed every half year as far as the "basic insurance" is concerned.

Also, under the LAMal, collective health insurance has been prohibited. Health insurance is based on the principle of the individual insurance, that is to say that each family member must be individually insured. Under the "basic insurance", all sickness funds pay for the same benefit. The basic insurance covers, without limit of time, all benefits provided in the canton of residence by doctors or hospitals (hospital wards) including maternity costs, as well as periods spent in the hospital ward of a recognized hospital. The LAMal basic insurance was designed to cover inpatient expenses only in public hospitals. However, when a private hospital or clinic contracts to abide by the LAMal, then the LAMal basic insurance covers its expenses. Otherwise private hospital treatment could be covered only by supplementary insurance^a.

The costs of the most important medicines, in accordance with a comprehensive list, are also met. The medical costs of long-term care at home or in a nursing home are also mostly reimbursed (but not the costs of board and accommodation).

The "basic insurance" is essentially financed by premium contributions by the insured. All sickness funds have to charge a community-rated (i.e. the same) premium contribution to all their adults over the age of 25 living in the same canton. This means that premiums contributions are identical for each adult over 25 in a given fund and cannot be graded according to selected parameters (e.g. age, gender, etc.) nor according to the income of the insured person. However, this premium can vary from sickness fund to sickness fund. In addition, sickness funds must fix a premium for insured persons under the age of 18 which is lower than for older insured persons. They are permitted to do the same for insured persons under the age of 25 if they are attending school or pursuing studies or an apprenticeship.

It is important to note, however, that persons whose financial circumstances are modest are entitled to state assistance with premiums. The conditions depend, however, on the canton of residence.

Under the LAMal, insured persons must also contribute to costs by sharing in the costs of care they receive. For the basic insurance, the co-payment consists of an annual deductible and a coinsurance rate of 10 per cent on the expenses that exceed the deductible. Nevertheless, the co-payment cannot exceed SFr 600 per annum. The LAMal has introduced an insurance system with an expanded choice of deductibles. In exchange for a choice of a higher deductible by the insured person, the insurer reduces its premiums by a given percentage. The choice of deductibles and the

^a Note, however, that the health law has recently changed in this respect; Cantons must also cover part of the expenses of treatments in private hospitals or clinics. This would have the effect of reducing the premiums for supplementary insurance.

associated premium reductions are laid down annually by the Federal Council. The different amounts of deductible are determined by the LAMal.

The insured is free to choose their doctor and the hospital. Note, however, that free choice of physician does not exist for patients in hospital wards, for those who only purchased a basic insurance. Also, doctors can practice where they wish and prescribe treatment as they see fit.

Resident persons can also purchase supplementary voluntary insurance in order to cover supplemental inpatient and outpatient services or allied health personnel. However, since most of the outpatient benefits are covered by the “basic insurance”, the most popular supplemental insurances are those which meet the cost of treatment in private hospitals. In this case, patients are free to choose their physician.

In the context of the present survey, the situation of asylum seekers and refugees in Switzerland is worth presenting. While Switzerland has counted for centuries as one of the European states recognized as asylum countries, it took until January 1981 for the first Asylum Act to come into force, thus providing asylum with a legal basis. There are nearly 50 000 applications being filed in a single year. Persons staying in Switzerland and falling within the sphere of asylum are recognized refugees, provisionally admitted persons, refugees undergoing proceedings or rejected persons whose return it has not yet been possible to execute. There are approximately 180 000 at present.

As a general rule, the law places on an equal footing all people requesting asylum or benefiting from collective protection and does not tolerate any a priori discrimination or exclusion. Asylum seekers and refugees are entitled to at least the same benefits as the resident population, as additional specific health care expenses may be covered by the Confederation. To this end, the Confederation grants subsidies to the Cantons. However, the new Order 2 on asylum relative to funding^a stipulates that the Cantons have to impose a limited choice of sickness funds and of health care providers while preserving quality of care. Cantons have taken up their responsibilities in a number of different ways, most of them in the form of a managed care system.

3 THE POLICY FOLLOWED UP TO NOW BY SWITZERLAND IN THE FIELD “MIGRATION AND HEALTH”

This section is devoted the migration issue. This is one of the important aspects in Switzerland, as well as in other countries, of so-called “globalisation” in its relation to health^b.

At this stage, it is worth emphasising once again that asylum seekers have rights to a full package of health care benefits. However, the way they can exercise their rights over health care services varies among Swiss cantons. Also, policies in the field of “migration and health”, beyond the benefits covered by LAMal, vary greatly among Swiss cantons, where different measures of prevention and of promotion of health were developed. Some measures also have been undertaken at the Federal level, for example the AIDS protection campaign.

The need for action in this field acted from the very start of the Nineties as pressure to promote measures targeted to certain groups of migrants. The question of the cost of asylum has also been the subject of several debates, which have lead *inter alia* to several initiatives at national and cantonal levels. In addition, since until 1996 health

^a Ordonance 2 sur l’asile relative au financement, August 11th, 1999.

^b The material in this section is drawn in part on the document “Migration et santé. Stratégie de la Confédération pour les années 2002 à 2006” published by the Swiss Federal Office for the Refugees. It brings out the policy differences between cantons in this field, and mentions some actions taken on the federal level.

insurance was not compulsory, legal migrants as well as asylum seekers lacked rights as far as health care services were concerned. The situation varied among the cantons; in some cantons asylum seekers received a voucher for a limited amount of cash, which implied the existence of some form of rationing.

Since 1996, the situation has changed, as migrants and asylum seekers obtained the right to a full package of health care benefits. However, they often experience difficulties in accessing the health care system, in part because of their lack of knowledge of the health care system. For this reason, methods were developed in general in the cantons in order to reduce these difficulties (points of contact, interpreting services or projects for setting-up networks for health care services for asylum seekers). Special measures were developed *inter alia* for the people who come under the asylum jurisdiction. In addition, measures of prevention and of promotion of health were developed for the migrant population. In this area, the majority of the cantons leave this activity to private and self-financed organisms. Ten cantons have developed an autonomous cantonal policy in this field. Two different approaches seem to prevail, even if important differences exist in the way in which each one of them uses resources. On one side, one finds the cantons which intervene primarily in the area of prevention (minimal structures in Zurich and Glaris, more developed in Neuchâtel and in Thurgovie). This approach gives primary importance to the behaviour and responsibility of migrants and asylum seekers as regards to health, and secondary importance to the reduction of difficulties in order to access to the health care system.

In contrast with this, one finds on the other hand cantons which, in addition to supporting prevention, endeavour to further the access to the health care system. There too, regarding prevention, it is necessary to distinguish between minimal interventions (Vaud, Schwytz and Soleure) and the recourse to systematic measures (Basle and Geneva). Note that in the majority of the cantons, it is private organizations, sometimes supported by the public authorities, which take part in the majority of the interventions in the field of the migrants' health. It is only in the cantons of Geneva, of Neuchâtel, of Basle-City and Basle-Countryside that the authorities are at the origin of the implemented measures.

Regarding access to health care, some cantons have set-up networks for asylum seekers, in the form of "managed care", involving agreements between one sickness fund and specific health care providers. In this case, health care services to asylum seekers are only provided through these networks.

At the federal level, *inter alia*, the "Project Migration and Health" has been developed. Vis-à-vis the HIV and AIDS, the aim is to adopt appropriate measures to ensure that the prevention programs also reach the migrant population. Based on the AIDS prevention programme, the initial pilot scheme had seen its targets extended little by little into prevention in the field of drug abuse and other aspects of health promotion.

In 1996, a migration service was created within the division "Dependence and AIDS" of the Swiss Federal Office of Public Health. This Office concluded thereafter a number of contracts of services with various institutions. These institutions support with resources various limited initiatives with a view to improving the health of the migrant population. Examples of such initiatives are: support for improving the accessibility of council services and for reducing the bureaucracy associated with them; research and adaptability in the fields of *interpreters' services* and *migration and dependence*; continuous training for the people working in the health sector; measures to creating awareness among the standard health service providers of the problems of migrants; material for preventative health care and information for the migrant population; regional co-ordination activities and setting-up of networks in the field of migrations and health. Some of the quoted measures also benefited from support from the Swiss Federal Office of Refugees (OR), within the framework of encouragement of the

integration of refugees recognised as such, but these efforts were not co-ordinated at the federal level.

It should be further pointed out that the OR provides since 1995 a modest contribution to the work of the Centre of therapies for victims of tortures and that it continues to support financially the projects to integrate recognized refugees which aim to promote their health. In addition, this office also refunds sums paid by the cantons for refugees whose stay was authorized within the framework of a special program of the HCR intended for people who are disabled, or who form part of a special group, authorized to remain on the basis of a decision from the Federal Council or from the Federal Department of Justice and Police, and whose members, who require a permanent help, were already disabled or sick when they entered Switzerland.

The Federal Office of Refugees refunds the cantons the health expenses of asylum-seekers and people admitted to stay on a purely provisional basis (health insurance premiums, special medical treatments and contributions to the lodging expenses in institutions that are not covered by the sickness funds or other institutions). Within the framework of the assistance and various job projects, other measures concerning the field of health also benefit from a support. At present, the efforts especially aim at reducing the costs which asylum-seekers involve for the health care system, without affecting the quality of care.

It should be further pointed out that in the autumn 2000 an Order on the integration of foreigners came into force, one aspects of which increases support for the health of the foreign population.

4 HEALTH STATUS INEQUALITY

In this section, we try to summarise the main findings in inequality in health in Switzerland as measured through mortality, morbidity or disability. Inequality in mortality is first examined at the overall level (overall mortality), and then inequality in infant mortality and adult mortality separately. Some results also distinguish cause-specific mortality. On the other hand, morbidity is often referred to as perceived morbidity. Criteria used to categorise people into classes are occupation, education, income, or gender.

It is worth mentioning at this stage that health status inequalities between men and women, age classes and socio-economic classes have been recognised by all the studies that have been undertaken at the national or even local level in Switzerland, whatever the definitions and measures used. Also, it seems that these inequalities tended to increase during the nineties. However, in comparison with other developed countries, health status inequalities appear to be lower in Switzerland. In fact, as already mentioned in the introduction, the issue of health inequality was almost ignored in Switzerland until the two or three last decades.

As detailed below, health status inequalities have been examined through mortality, morbidity, and disability. It has been found that life expectancy in Switzerland is one of the highest in the world (with the well known difference between men and women). Infant mortality rate is higher among children of lower socioeconomic classes. Age of death is generally lower in disadvantaged backgrounds. Socioeconomic classes used are occupational classes, level of education classes, and income classes. Mortality and (reported) morbidity rates also vary by gender, causes and age groups. Manual and/ or non qualified workers are the most vulnerable. However, on the international level, Switzerland has smaller-than-average inequalities in both mortality and morbidity. Important gaps are also noticed in disability rates according to the socio-economic classes of the elderly.

4.1 MORTALITY

In a wide range of the literature, inequality in health has been analysed through mortality. Usually, this approach is based upon national data sources, and age at death has been compared between social classes. The comparison may be undertaken at a national or a more disaggregated level. Mortality rates are used to compare health between countries or between population groups in the same country. There is also a distinction between overall mortality and cause-specific mortality.

4.1.1. Overall mortality in Switzerland

Life expectancy in Switzerland is one of the highest in the world. For example, in 1987, overall life expectancy was 77.3 years in Switzerland (73.8 for men and 80.9 for women), 77.4 years in Iceland, and 77.2 years in Sweden. Women have higher life expectancy in all countries. Similar results show up for life expectancy at the age of 65 years. This was 18.1 years in Switzerland in 1987, but differences between men and women were higher (15.8 years for men and 20.1 for women) (Weiss (1993)).

In 2000, life expectancy in Switzerland was 76.9 years for men and 82.6 years for women^a.

4.1.2 Infant mortality

In an early population study concerning the years 1979-81, Minder, Ackermann and Paccaud (1985) concluded that children of worker fathers have higher mortality than those of farmer fathers. In her study about Swiss and Italian children, concerning the region of Basle in the year 1976, Ackerman (1985) showed that Italian children have a worse index than Swiss children.

For infant mortality, Lehmann, Martin, and Gutzwiller (1986) argued that the most important discriminating factor, after biologic factors, is the socio-economic class of the family (profession of the family head), even if these rates are remarkably low relative to those of other countries. They showed that infant and perinatal mortality rates, as well as low weights at birth, display only small differentials between the main socio-economic classes. However, the perinatal mortality is 5 times higher and the infant mortality is 10 times higher in the small group of the no-profession family heads, whatever is the age, marital status or nationality of the mothers. These mortality rates vary also with the mother's nationality; for example, children of Turkish mothers have mortality rates 50% higher than those of Swiss mothers. They also conclude that farmers and their children are also more exposed to premature death.

Lehmann, Mamboury and Minder (1988) showed that, for all causes of death in children and teenagers, children of farmers have a death rate almost twice that of the two higher classes. Children of qualified workers and those of non qualified employees and workers have intermediate rates. These observations are almost the same for boys and girls.

Note that the overall infant mortality in Switzerland has considerably decreased during the last century. According to OFS (2002), it was in 2000 5 per 1000 for boys (147 in 1900, 35 in 1950, and 10 in 1980), and 4 per 1000 for girls respectively 121, 27, and 7 per 1000).

4.1.3 Adult mortality

^a Source: Website of the OFS: http://www.statistik.admin.ch/stat_ch/fber_m.htm

Analysing death certificates for all Switzerland concerning the 1979-84 period, Minder (1985) concludes that age of death was lower in disadvantaged backgrounds.

For adult's mortality by socio-economic groups, Lehmann, Mamboury, and Minder (1988) present an analysis of the Swiss masculine adult population of 15-74 years, partly on the basis of Minder, Beer, Rehmenn (1986). Data for women had not been used because, it was claimed by the authors, women's socio-economic category must be established in some cases through their own occupations, and in some cases through those of their husbands. Foreign residents were also not included because of the diversity of the Migrant flows characteristics. The authors calculated Standardised Mortality Rates (SMR), for deaths in 1979-82 among Swiss men 15-74 years by socio-economic class. The latter were defined in 5 groups: (i) highest class, (ii) middle class, (iii) skilled employees, (iv) skilled workers, (v) unskilled workers and employees). These SMR's were 64% of the general mortality rate for the highest group, 77% for the second one, 104% for the third one, 124 for the fourth one, and 101 for the last one.

For the entire masculine adult population, an increase of mortality rates is noticed in each age class according to socio-economic groups. Mortality rates vary also by cause and socio-economic group. However, these differences are wider among the 30-39 years age class: SMR's vary from 57% (for the first group) to 150% (for the fourth group). For example, deaths caused by cardiovascular diseases vary between 56% and 138% according to socio-economic class.

For the 1981-82 period, life expectancy without disability in Switzerland was 65.9 years for men and 69.7 years for women. It was about 90% of total life expectancy. According to the same source, differences in life expectancy without incapacity are expected to exist not only between men and women, but also between social classes because of the existing gaps in mortality and in disability frequencies between social classes.

Note that, according to the OFS publications, mortality rates by sex and age in Switzerland in 1999 show remarkable differences between men and women. For men, mortality rates were 110 per 100000 in the 15-44 age class, 594 in the 45-64 age class, 3976 in the 65-84 age class, and 18774 for the above 84 age class. For women, these rates were respectively 56, 317, 2362, and 15344 per 100000; hence showing lower values for each age group. Furthermore, it was even the same for children of 1 to 14 years, for whom the corresponding rates were 20 per 100000 for boys and 15 per 100000 for girls.

4.1.4 International comparison of mortality

Mackenbach, Kunst, Cavelaars, Groenhof and Geurts (1997) calculated an absolute measure for inequalities in mortality, a risk difference (which takes into account differences between countries in average rates of ill-health) in a large study that compared inequalities in morbidity and mortality between different countries in Western Europe including Switzerland^a. Data on total mortality by level of education and/or occupational class were obtained for nine countries including Switzerland (for about 1980 to about 1990)^b.

The results of this article show that Sweden and Norway had larger inequalities than most other countries in both morbidity and mortality^c, whereas Switzerland and Spain had smaller than average inequalities in both outcomes. France had the largest inequality in mortality but average inequality in morbidity.

According to SHS-97, health status seems to be better in Switzerland than in other

^a Sweden, Norway, Denmark, GB, France, Netherlands, Italy, Finland, Spain, Germany, and Switzerland

^b Sweden, Norway, Denmark, GB, France, Italy, Finland, Spain, and Switzerland.

^c In a figure combining average rank of morbidity and average rank of mortality, Switzerland and Spain occupied the bottom left corner.

European countries. As noted earlier, in terms of life expectancy, Switzerland is in the third European rank after Iceland and Sweden. In 1987^a, overall life expectancy at birth was 77.3 years in Switzerland (hence ranked second after Iceland). Switzerland was even the first in life expectancy at the age of 65 years. But social inequalities in health tended to increase in Switzerland too, as in other European countries, during the nineties which was a general economic stagnation period.

4.1.5 Mortality differences by occupational class

Kunst, Groenhof, and Mackenbach (1998) compare eleven countries including Switzerland^b with respect to the magnitude of mortality differences by occupational class, paying particular attention to problems with the reliability and comparability of the data that are available for different countries. Nationally representative data on mortality by occupational class among men 30-64 years at death were obtained from longitudinal and cross-sectional studies. A common social class scheme was applied to most data sets. The magnitude of mortality differences was quantified by three summary indices^c.

For men 30-44 years at death, the age-standardised mortality rate (SMR) was estimated to be 0.82 for non-manual occupational class, 1.20 for manual class, and 1.23 for the agricultural workers in Switzerland. Hence, the age-standardised mortality rate ratio comparing manual classes to non-manual classes ranks Switzerland into the third position (1.45) after Italy (1.35) and Ireland (1.43). In each country, the adjusted SMRs are lower than the national average for non-manual classes and higher than average for manual classes. The manual vs. non-manual rate ratios for most countries are close to 1.50. Larger rate ratios are observed for Norway, Sweden and especially for Finland (1.76). For men 45-59 years at death, the rate ratio ranks Switzerland along with Norway into the second position (1.34) after Denmark (1.33). (The 3rd table for men 60-64 years at death does not include Switzerland). The authors give also results comparing manual classes to the class of professionals, large employers, administrators and managers. Here, the rate ratio is always larger than the corresponding manual vs. non manual estimate. And, Switzerland has the lowest rate ratio ((1.46) for men 30-44 years and (1.37) for men 45-59 years) among the six countries presented^d.

When the population distribution over occupational classes was taken into account, relatively small differences were observed for Switzerland (1.43 for men 30-44 years at death, and 1.32 for men 45-59 years at death), Italy and Spain. When national mortality levels were taken into account, relatively large differences were observed for Finland and Ireland.

The application of the Index of Similarity (ID) for deaths among men 45-59 years gives approximately the same pattern as the one observed with the rate ratio measures. A high ID is observed for France (12), whereas it ranges between 6 and about 9 for the others^e. Again, the ID is smallest in Switzerland, Italy and Spain. The class of farmers and farm labourers contributes to the small ID values for these countries, because this class forms a substantial part of the population while its mortality level is close to the national average. National probabilities of dying between the ages of 45 and 65 years range from about 16.5% in Sweden and Switzerland, to more than 23% in Finland and Ireland. Manual classes in Sweden and Switzerland

^a Weiss Walter (1993), p21-22

^b Finland, Sweden, Norway, Denmark, England/Wales, Ireland, France, Switzerland, Italy, Spain, and Portugal.

^c Rate ratio: ratio between mortality rates of the 2 classes; index of similarity: rate ratio with the population distribution across occupational classes, and absolute difference in death probabilities.

^d Finland, Sweden, Norway, England/Wales, France and Switzerland).

^e Which means that between 6 and 9% of all deaths in these countries should be redistributed in order to have the same mortality level in the three broad occupational classes (manual, non-manual, agricultural).

have lower probabilities than manual classes from other countries, and even lower probabilities than the non-manual class of Ireland.

Data problems were found by the authors of the study to have the potential to bias inequality estimates, substantially especially those for Ireland, Spain and Portugal. This study underlines the similarities rather than the dissimilarities between European countries. The authors tend to conclude that there is no evidence that mortality differences are smaller in countries with more egalitarian socio-economic and other policies.

4.1.6 Mortality differences by gender

In 2000, life expectancy at birth was 76.9 years for men, and 82.6 years for women; hence revealing that women live about 5.7 years more than men in Switzerland. In Weiss (1993), a table comparing several countries ranked Switzerland in third place (with 7.1 years of difference between men and women), after Poland (8.4 years) and Hungary (8.2 years), but before countries like Japan, Sweden, Germany, Italy, Denmark, and the U.S.

4.1.7 Socio-economic differences in stroke mortality

Kunst, del Rios, Groenhof and Mackenbach (1998) present an international overview of socio-economic differences in stroke mortality. The article concludes that socio-economic differences in stroke mortality are a problem common to all countries studied, and that there are probably large variations, however, in the contribution that different risk factors, such as tobacco and alcohol consumption, make to the stroke mortality excess of lower socio-economic groups. Hence, medical services can contribute to reducing socio-economic differences in stroke mortality.

Yet, according to Kunst, del Rios, Groenhof and Mackenbach (1998), several studies observed that people from lower socio-economic groups have higher chances of dying of stroke. Unpublished data on mortality by occupational class were obtained by the authors from national longitudinal studies or cross-sectional studies. The data refer to deaths among men aged 30 to 64 years in the 1980s. A common occupational class scheme was applied to most countries. The mortality difference between manual classes and non-manual classes was measured in relative terms (by rate ratios) and in absolute terms (by rate differences).

In all countries, manual classes had higher stroke mortality rates than non-manual classes. This difference was relatively large in England and Wales, Ireland, and Finland and relatively small in Sweden, Norway, Denmark, Italy, and Spain. Differences were intermediate in the United States, France, and Switzerland. In Portugal, mortality differences were intermediate in relative terms but large in absolute terms. In most countries, inequalities were much larger for stroke mortality than for ischemic heart disease mortality.

4.1.8 Cause-specific mortality

Some researchers go more deeply into mortality analysis by examining whether inequality in health depends upon cause-specific mortality.

Kunst, Groenhof, Mackenbach, and Health (1998) aimed to compare countries in Western Europe in the period 1980-9 with respect to class differences in mortality from specific causes of death and to assess the contributions these causes make to class

differences in total mortality. Comparison of causes of death has been undertaken between manual and non-manual classes, using data on mortality of men aged 45-59 years at death from national studies.

A north-south gradient was observed: mortality from ischemic heart disease was strongly related to occupational class in England and Wales, Ireland, Finland, Sweden, Norway, and Denmark, but not in France, Switzerland, and Mediterranean countries. In the latter countries, cancers other than lung cancer and gastrointestinal diseases made a large contribution to class differences in total mortality. Inequalities in lung cancer, cerebrovascular disease, and external causes of death also varied greatly between countries. These variations in cause specific mortality indicate large differences between countries in the contribution that disease specific risk factors like smoking and alcohol consumption make to socio-economic inequalities in mortality. The mortality advantage of people in higher occupational classes is independent of the precise diseases and risk factors involved.

An alternative approach allows more detailed comparison by using the number of "years of potential life lost" (YPLL). According to Beer, Bisig and Gutzwiller (1993), the concept of YPLL proved to be a useful additional indicator not only of mortality in general, but also especially for monitoring causes, related to the lower social classes.

This study extends the previous work of Swiss men aged 15-74 for the period 1979-1982 (which used standardised mortality ratios (SMR)) by calculating years of potential life lost (YPLL) before age 75, an additional indicator of mortality that puts more importance on deaths at younger ages. Emphasis is given on causes contributing to most years of life lost, especially to accidents and violent deaths, which result in more than 30% of total years of life lost. The distribution of years of life lost of the most important causes to social classes is illustrated also for age-specific groups. Additionally, this article presents all causes which account for more than 3% of total years of life lost. The social inequalities are shown as ratios between the social class with the highest (skilled manual workers) and the lowest risk (professionals).

Most years of life are lost by skilled manual workers not only in general but also cause-specific. While the SMR from all causes of death showed a 2-fold difference between professionals and skilled manual workers, the social gradient in YPLL rate was even larger (2.5). Hence, the measure of years of potential life lost emphasises the disadvantage of skilled manual workers to die earlier than professionals.

Specific studies about the immigration problems in Switzerland are not numerous. In particular, there are not many works available which evaluate whether the immigrant population, at the national level or at the cantonal level, presents differences in death rates, both in general and according to cause of death, with respect to the Swiss population. A notable exception is the recent work of Degrate, Testa-Mader and Clerici (1999) about the Canton Ticino which is one of the Swiss cantons with the highest number of foreigners (mainly Italians): roughly 25% of the population. In this work, crude and standardized death-rates were calculated for natives, Italians and other foreigners using data on those deceased in the Canton Ticino during 1991 and 1994. Interestingly enough, higher death-rates (both sexes and all age groups, except 0-19 years) were calculated for almost all causes of death, of the Swiss group with respect to Italians and other foreigners. According to the authors, the low death-rates found in the immigrants may be due, at least partially, to the "healthy emigrant" effect. This effect seems to be stronger than the effect of the often negative factors to which immigrants are exposed in the host country.

4.2 MORBIDITY

Morbidity is one of the most used tools to compare individuals' health status. Usually, morbidity is self-reported by the interviewed persons. Another health indicator used is

the percentage of people suffering health problems during a reference period.

The first representative survey on the health status and the use of health care of the Swiss population is the "Sozio-Medizinisch Indikatoren der Population der Schweiz" (SOMIPOPS) (Gutzwiller, Leu, Schulz and Zemp (1987)) which was undertaken in 1981. It has permitted us partially to fill the knowledge gaps concerning population health status and use of health care. It was particularly oriented to special population groups, like single mothers - and the elderly ^a.

The SOMIPOPS survey contained data on demographic and socio-economic characteristics, health status, health care utilisation, life style and risk factors, health expenses and infant mortality.

Using these data, Lehmann, Mamboury and Minder (1988) describe social inequalities in health, illness, death and health care. All the data presented show the existence of social and economic inequalities in health and illness in Switzerland. Manual and/or non qualified workers are the most vulnerable. Also, it seems clear from the data that some categories are very disfavoured, for example mothers who are household heads, unemployed, and some classes of immigrants.

For more recent data, an essential source of information for health inequality in Switzerland is the Swiss Health Surveys (SHS). Their aim is to give an overview of the health status of the Swiss population. The first SHS^b, was conducted during the years of 1992-93 by the Swiss Federal Office of Statistics (OFS). The survey also gathered data on attitudes, life conditions, and behaviour that may affect health, as well as information on the use of health services. This is an important source of data and information in the area. A specific chapter by Junker and Minder (1996) is devoted to social inequalities in health. Many indicators show a significant effect of social class on health.

The Swiss Health Survey was carried out again in 1997^c. As shown in Junker, Fischer, Koller and Calmonte (2000), relationships between social class (i.e. profession, education, income) and health are rather close. Here again, the factors employed to distinguish socio-economic classes are the same as those of the SHS-92-93, and health is examined on the basis of three criteria: health status, behaviour related to health and the use of health care. The social scale compares the lower third to the remaining part of the population by profession; and the lower fifth to the remaining population by income and education. Only people of 25 years or older are included in the following SHS 1997 results.

4.2.1 Perceived morbidity in general

The results of various research projects allow us to note that a large majority of the Swiss population judged their health status to be good to excellent. According to Sommer and Gutzwiller (1986) on the basis of the SOMIPOPS survey 84% of the resident population qualify their health status as good in general (63,5% as good, 20,8% as excellent). Conversely, 82,4% of the adults declared they had had minor health disorders during the previous four weeks. For one person out of seven however, these provoked a slowing down of their daily activities ("social dysfunction"). The frequencies of the complaints as well as the frequency of the illnesses are greater for women, whereas their life expectancy is 7 years above that of men. It is necessary to take also in consideration that the chronic deficiencies increase strongly with age. Thus, more than 80% of the population beyond 80 years endures such a deficiency

^a It had been undertaken in 1981 on a sample of 3419 Swiss and 836 non Swiss residents of more than 20 years old (580 working women (193 non Swiss), and 1285 working men (337 non Swiss)).

^b More than 15000 individuals aged over 15 years, representing the resident Swiss population, have participated in the survey (Enquête suisse sur la santé 1992-93, analyse comparée Vaud-Suisse, ISP, Lausanne (1996)).

^c OFS: Method: survey sample 19'000 households (people living in Switzerland (at least 15 year-old), Participation: 13'000 persons, Period: 4 waves from January to December 1997.

(sight and hearing problems in most cases).

According to the SHS-92-93, the percentage of people (in all age classes, and for men and women) valuing their health status as passable or bad is higher for low classes^a. This percentage is always higher for women, and increases across age classes. It is also generally higher in the French-speaking area, compared with the German-speaking one. Differences between social classes are also greater in French-speaking Switzerland^b.

The SHS-97 indicates that the subjective health status of men and women seems relatively stable during the nineties. In 1997, 86% of men and 80% of women do feel well or very well. Also, more than 60% of women and more than 70% of men of at least 75 years say they have a good or very good health status. Three out of four of the health problems of those who do not feel well have physical causes, one out of six has psychic causes, and one out of ten has both physical and psychic causes. Chronic health problems increase with age, but women are more severely affected than men in all age classes.

Subjective health status seems to be better in German-Speaking Switzerland (where only 3-4% of women feel bad) than in Italian-speaking Switzerland (respectively 10%), where hospital stays are also longer. In general, rural inhabitants declare that they feel well more frequently than urban ones.

The SHS-97 results show also some important differences between Swiss and non-Swiss people. Non-Swiss people are divided into two groups: Italians and other foreigners. Subjective health status is declared to be good by 87% of Swiss men, 81% of Italian men, and 83% of other non-Swiss men. For women, these proportions are respectively 81%, 69% and 80%.

Mackenbach, Kunst, Cavelaars, Groenhof, and Geurts (1997) calculated odds ratios or rate ratios to compare a broad lower with a broad upper socio-economic group. Data on four indicators of self-reported morbidity by level of education, occupational class, and/or level of income were obtained for 11 countries, and years ranging from 1985 to 1992. Occupational odds ratios for morbidity ranged between about 1.5 and 2.5. For Switzerland, health inequalities have been found to be rather low. Among others, perceived general health has been compared by level of education ("up to lower secondary" vs. "upper secondary and higher"). For men aged 25-69, relative index inequality places Switzerland in the third best rank (after Germany and Spain). For women aged 25-69, the same index places Switzerland in the second best rank (after Germany).

4.2.2. Morbidity differences by occupational class

In SHS 1992-93, the proportion of those with passable/bad health status was 48% higher in manual workers class than in non-manual workers class among men, and about 23% among women. In SHS 1997, the same proportions were 50% higher in manual workers class than in non-manual workers class among men, and women (SHS 1997, p.67).

Cavelaars et al. (1998b) also describe morbidity differences according to occupational class among men from France, Switzerland, Germany, Great Britain, the Netherlands, Denmark, and Sweden. Data were obtained from national health interview surveys or similar surveys between 1986 and 1992. Four morbidity indicators were included. For each country, individual-level data on occupation were recorded according to one standard occupational class scheme. To describe the pattern of morbidity by occupational class, odds ratios (OR) were calculated for each class using

^a Classes used are: manual vs. non-manual professions, compulsory vs. non compulsory education, and income below vs. above 3000 CHF.

^b Publications, while comparing these inequalities between language regions in Switzerland, do not give any possible explanations for this.

the average of the population as a reference. The size of morbidity differences was summarised by the OR of two broad hierarchical classes. All OR were age-adjusted.

For all countries, a lower than average prevalence of morbidity was found for higher and lower administrators and professionals as well as for routine non-manual workers, whereas a higher than average prevalence was found for skilled and unskilled manual workers and agricultural workers. Self-employed men were in general healthier than the average population. The relative health of farmers differed between countries. The morbidity difference between manual workers and the class of administrators and professionals was approximately equally large in all countries. Consistently larger inequalities estimates, with no or slightly overlapping confidence intervals, were only found for Sweden in comparison with Germany. The results suggest that morbidity differences according to occupational class among men are very similar between different European countries.

4.2.3. Morbidity differences by level of education

On the basis of the SOMIPOPS survey, Lehmann, Mamboury and Minder (1988) found that the members of the lower social classes, workers or without basic vocational training have worse results in health status and morbidity, and those of the higher classes or having a superior training have the best results, for:

- the frequency of health trouble (during the last 4 weeks) having strongly limited the usual activities.
- the frequency of severe diagnoses, pronounced by physicians during the last 12 months
- the frequency of greatly disabling handicaps.

According to some of the variables and the age classes, the social gradient is steeper if one takes into account the present professional category rather than the initial training of the individuals.

According to the SHS-97, the proportion of those who have bad health status is at least twice higher for low educated people. One third of less educated women say they have medium or bad health, against 1/6 for more educated women. Among men, it is respectively one quarter against 1/8.

To assess whether there are variations between 11 Western European countries with respect to the size of differences in self reported morbidity between people with high and low educational levels, Cavelaars and al. (1998a) use national representative data on morbidity by educational level, obtained from health interview surveys, level of living surveys or other similar surveys carried out between 1985 and 1993. Four morbidity indicators were included and a considerable effort was made to maximise the comparability of these indicators (perceived general health, long term disabilities, chronic conditions, any long standing health problem). A standardised scheme of educational levels was applied to each survey (three levels were finally used: university and other forms of higher education, secondary level (second phase), and lower levels). The study included men and women aged 25 to 69 years. The size of morbidity differences was measured by means of the regression-based Relative Index of Inequality (RII). The size of inequalities in health was found to vary between countries. Results were presented for men and women separately.

The prevalence rate of less than good health for men from Denmark, France, Italy, the Netherlands, Norway, and Sweden is approximately 20%. Relatively high prevalence rates were observed for Finland, Germany, Spain, and Great Britain, and a low overall prevalence rate was observed for Switzerland (13.2%). The RII for less than good health varies from 6.98 (Norway) to 2.86 (Germany), with 3.09 for Switzerland. It was largest in Norway, Sweden, the Netherlands, and Denmark, while

the smallest inequalities were found for Switzerland, Germany, and Spain.

The percentage of men who mentioned one or more disabilities ranged from 7.8 to 17.9, with 10.9 for Switzerland. Inequality estimates were highest for Norway and the Netherlands, followed by Finland and Germany. Small inequalities were observed for Denmark (2.92) and Switzerland (1.92).

The results for women corresponded fairly well to that of men: relatively small inequalities were found for Switzerland, Germany and Spain, and large inequalities for Norway and Sweden. For Switzerland, the prevalence rate was 15.5 (which is the lowest vs. 55.7 for Germany) and the RII 2.72 (which varies from 2,51 in Germany to 7.27 in Sweden).

The authors also mention that a further analysis they undertook allows them to conclude that the international variations found in this study (using the RII) result from variations between countries in the effect of educational level on morbidity and not from variations in the size of inequalities in education itself.

4.2.4. Morbidity differences by level of income.

In the SHS 1992-93, the proportion of those with passable-bad health status was 39% higher in low income class for men, and about 48% higher in low income class for women. In 1997, these proportions were approximately 32% among men and 37% among women.

There are a number of results of several studies about morbidity of the elderly: Abelin, Schlettwein, Gsell, Minder, et al. (1985), in their study of 480 aged persons of Bern and Basle in 1976 show important differences according to income level in functional disorders and need for help in daily life gestures.

Bucher (1986) shows that the retired without professional training, men and women, suffer more disorders and handicaps than their better trained contemporaries. In a rural zone, the gaps are less serious because of social and familial integration of the elderly, while in urban areas, the importance of medico-social services permits a reduction in the effects of poverty. Gilliland (1983) confirms that the physical dependence and lodging in institutions are clearly more frequent among aged persons with low incomes.

4.2.5 Morbidity differences by gender

In the SOMIPOPS survey, the sample of single mothers only counts 45 people. But, according to Lehmann, Mamboury, and Minder (1988), it reveals a health status which is worse than that of the married mothers (a bigger number of recent disorders limiting their daily activities, more severe medical diagnostics during the past year ...etc.). They are more often handicapped and more often have functional disability.

The SHS-92-93 used also, as an indicator of health status, the percentage of people suffering health problems during the last four weeks^a. Whatever the socio-economic factor used, the differences here are greater in the higher age classes. However, these differences are more important between women and men than between social classes or age classes.

Similar differences are noticed for long term physical and psychic problems. Here, the most discriminating factor is income for men and education for women. More specifically, the proportion of people with long term health problems among poor men is 32% higher than among rich men. The proportion of people with long term health problems among less educated women is 53% higher than among more educated

^a Which means at least four minor or two major categories (headache, tiredness, insomnia,...) of health problems over nine.

women.

4.3 DISABILITY

Some measures of inequality in health status refer to disability. According to SHS 1992-93, over the whole Swiss population under 65 years, 3.5% of men and 3.0% of women live with a handicap^a. In the population over 65 years, 23% of men and 19% of women live with a physical handicap; the prevalence even exceeds 55% for people beyond 85 years. Important gaps are noticed according to socio-economic classes of the elderly (more than 65 years). For men, 29% in manual professions vs. 17% in non manual ones, 26% in compulsory education vs. 22% in higher education, 25% in low incomes vs. 14% in high incomes. For women, of the same age class, the corresponding rates are respectively 22% vs. 15%, 19% vs. 18%, and 20% vs. 10%.

Lehmann, Martin, and Gutzwiller (1986), investigate the disability insurance (AI) data in the canton of Vaud in 1981. They found that, among the population of 50-65 years-old, 10% of the Swiss are in the AI (disability insurance) against 18% of the Italians, whereas this rate for Italians of 20-35 years is lower than that of the Swiss of the same age. The "extra-disability" of aged Italians is observed for all the classes of disability causes except for psychiatric illnesses.

5 HEALTH RELATED BEHAVIOUR

Health related behaviour can also reveal some inequalities between classes. In this section, we shall examine inequality in the utilisation of preventive services, in tobacco consumption, and in nutrition habits.

Lesser use of preventive care by the members of modest families, and by men compared to women, has been shown by several studies. While women of higher socioeconomic classes had higher smoking rates in 1992-93, men of higher classes seem to have lower rates. In 1997, more educated men (women) have higher (lower) smoking rates. However, tobacco consumption does not vary according to income, for both men and women. Proportions of people with excess of weight are greater among lower socioeconomic classes for both men and women. Differences between socioeconomic classes were stronger for women. In 1997, excess of weight affects men more than women, but men's proportion has increased less than that of women since 1992/93.

5.1 UTILISATION OF PREVENTIVE SERVICES

Several studies (Buchmann, Karrer, Meier (1980)) have shown lesser use of preventive care by the members of modest families. Bucher and Gutzwiller (1987), in the context of the SOMIPOPS survey, examine the relationship between social inequality and health behaviour for Swiss citizens. Social inequality was measured by an indicator model including occupational position and education. They found that utilisation of preventive services was better among women than men, a trend not dependent on social class. Women of lower social position and education used cervical screening services less often. Unskilled men made less use of preventive services offered.

Galobardes, Morabia, and Bernstein (2000) present some results on health

^a Five types are defined: can't or can with major difficulty: a) read, b) hear well, c) take on and off clothes, d) has a hearing aid, e) can't walk 200 meters without stopping and without major problems.

inequalities comparing socio-economic classes in Geneva and Switzerland. For example, there is two times more smoking women (or who were smoking) among those with a secondary or high education level than among those with a primary education level. This result is quite striking, as one would expect the opposite, and contradicts somehow other findings as we will see below.

In Geneva, obesity is more frequent among men and women of low socio-economic levels. And, about one over four (man or woman) are stout among persons of both low educational and professional level. Also, socio-economic inequality in obesity has increased between 1992 and 1997, and the increase of obesity prevalence has been the highest for women of lower socio-economic level.

5.2 TOBACCO CONSUMPTION

The SHS 1992-93 show that differences in tobacco consumption are important between men and women in each social class. While minor differences are observed in the masculine population, women of low education level have a proportion 26% higher of smokers, whereas in manual professions, this proportion is 12% lower (when smoking rates are standardised for age^a).

In 1997 (SHS), 38% of men and 26% of women were smokers. 43% of less educated men were smokers, against 37% of more educated ones, while conversely for women, these rates were respectively 23% against 27%. Tobacco consumption does not vary according to income, for both men and women.

In 1992/93, higher social class (in terms of education) females smoke slightly more (24.5% among more educated, against 23.4% among less educated women), whereas in 1997, higher social class (in terms of education) females smoke less (23% among more educated, against 27% among less educated women)^b.

5.3 NUTRITION HABITS

According to the SHS 1992-93, differences are observed between social classes (whatever is the socio-economic indicator) and between men and women at the national level for the Mass Body Index (BMI). In the masculine population, the percentage of individuals with a high BMI^c are 22% more in manual professions, 29% more for persons with low education level, and 9% more for low income persons. These percentages are respectively 40%, 76%, and 42% in the feminine population.

In the SHS 1997 results, excess of weight (a BMI above 25) affects men (almost a half of them) more than women^d (almost a third), but men's proportion has increased by 3% since the earlier survey 1992/93, whereas the women's proportion has increased by 6%. There exists for both a clear relationship between socio-economic class and an excess of weight. Education is the most important discriminator, and income is the least. The proportion of such persons is 30% (75%) higher for lower social classes among men (women).

Veuille and Schenkel (2001) explain that the fact that boys reported significantly better nutrition habits than girls does not imply that they actually eat healthier food, but that they eat breakfast more often, that they are less concerned about the quantity and quality of the diet (1.8% boys vs. 13.3% girls), and that they say less often they would prefer not to eat anything if this were possible (8.1% vs. 20.1%). On the opposite, boys are more often drunk and consume more alcohol. Smoking cigarettes and cannabis, however, is equally popular among boys and girls.

Immigrants eat breakfast less often, are more concerned about the quantity of food,

^a Age standardised rates take into account the population distribution among age classes.

^b This result seems to contradict the finding of Galobardes, Morabia, and Bernstein (2000) mentioned earlier. This apparent contradiction may be due to different definitions of socio-economic classes and social classes.

^c BMI > 25kg/m².

^d Aged 25 years and more.

and more of them would prefer not to eat anything if this were possible (18.8% vs. 11.0% of Swiss adolescents).

Nutritional problems occur more often in the lower social classes, but social class does not otherwise show up as a determinant of health attitudes and behaviour.

6 HEALTH INSURANCE

The main characteristics of the changes in the health insurance system in Switzerland have been described in Section 2. In this section, we shall be concerned with the choice between insurance plans. Before we start on this topic, we shall consider the issue of the "basic package", that is to say the benefits covered by the so-called "basic insurance" or "social insurance".

The issues considered in this section are of paramount importance. Indeed, differences between countries in the composition of the basic package of health care covered by the "minimum" health insurance plan may create or increase inequalities among people by the rationing of effective services. For Switzerland, it may be the case for dental care (which is less covered) or for certain forms of complementary medicine (which are more covered). On the other hand, differences of health care coverage between basic and supplemental health insurance may increase inequalities depending on the relative advantages and the relative premium differences.

6.1 BASIC PACKAGE

The composition of the basic package is of fundamental importance in the analysis of health insurance systems. The main question to be addressed is whether it satisfies the basic needs of the population. Polikowski and Santos-Eggimann (2002) provide an analysis of the basic package of services covered by social health insurance in France, Germany, Israel, Luxembourg, The Netherlands and Switzerland. The aim of the authors was to check the appropriateness of the Swiss catalogue, with special attention to the risk of unequal access to health care by rationing of effective services.

All countries chosen have a social security system with a statutory or compulsory health insurance system that reimburses insured individuals for a broad package of services. Most of the 23 broad categories of health services covered in Switzerland are also covered in the other five countries. However, there are likely to be large differences in the actual coverage of interventions within the broad categories. For example, certain forms of complementary medicine (if provided by physicians) have recently been included in the Swiss catalogue. Complementary medicine thus has unique status in Switzerland because it is excluded in the other countries, although France and Germany may cover it in limited circumstances.

Switzerland also seems to be different from the other countries by not covering services like dental care, non-medical psychotherapy (within outpatient care), and home help (within maternity services). Also, some medical services could be covered only in Switzerland, like multiple sleep latency test, maintenance of wakefulness test, actigraphy, play and paint therapy with children, and psychodrama. Other services may be covered by all countries except Switzerland, like artificial insemination (except for cervical sterility), in vitro fertilization with transfer of the embryo, heart-lung transplantation and pancreas transplantation alone.

The authors found that coverage is most comprehensive in Germany and Switzerland, which are also the countries with the greatest total health expenditure. In addition, the authors point out to the fact that the risk of unfair access differences between countries should not be disregarded. In particular, the scope for political

decisions to exclude a given service or a category of services on grounds other than the results of evidence-based medicine or health technology assessment, can lead to discrimination against individuals who cannot afford a service, either by direct payment or through a complementary insurance scheme.

6.2 HEALTH INSURANCE CHOICE

The issue of health services covered in the basic package in Switzerland is related to the issue of supplemental insurance choice. This is not the only choice to be considered by the resident population. As described in Section 2, within the “basic insurance” the insured person has to make a choice of deductibles.

As noted in Section 2, the main difference between the “basic insurance” and supplemental insurance does not concern outpatient services, but rather inpatient services. The main advantage of supplemental insurance which meets the cost of treatment in private hospitals (or private wards within public hospitals) is that it offers the possibility of patients to choose freely their physician.

In fact, another possible advantage is reduced waiting time. Indeed, given the continuous health care cost increase during the 1980s and the 1990s, reforms in Switzerland, as well as many other countries, were mainly concentrated in the 1990s on the supply side. This involved the application of prospective, global budgets, for public hospitals. This, in turn, generated financial difficulties of public hospitals, and one frequently faces implicit or explicit rationing measures which find expression through quite long waiting time for some surgeries. This is to be contrasted with the lack of waiting time for treatment in private hospitals and clinics which could be covered only by supplementary insurance. The question of whether this situation widens health inequalities is particularly controversial. In fact, one must take into account not only quality of care but also appropriateness of care. It is sometimes argued that there exists in the private sector a financial incentive for “supplier induced demand”, which may result in an appropriate treatment, notably an unnecessary surgery. Therefore, due to the appropriateness issue, the effect of supplemental insurance on quality of care is unclear. The question of whether supplemental insurance widens health inequalities by providing access to treatments in private hospitals and clinics is still an unsolved empirical issue under LAMAL, at least in Switzerland.

The choice of a given deductible level may be based on the comparative advantage it offers to the insured person. Those who are in good health and do not expect to make much use of health services within a given year may purchase a basic insurance with a high deductible, and thus benefit from a reduction by a given percentage of its premium. This is the well-known behaviour effect known in economics as “adverse selection”.

But it is not necessarily the case that only people in good health would purchase a “basic insurance” with a high deductible. In fact, persons whose financial circumstances are modest and are not entitled to state assistance with premiums may purchase insurance with a low premium associated with a high deductible. But in some cases, this choice may have a quite negative effect on the use of health care services by this particular category of the population, given the financial burden associated with high deductibles.

As for supplemental insurance, the effect of the choice of deductibles on access to health care is an empirical issue whose analysis has so far not been systematically investigated.

These two aspects of the Swiss health insurance system lead us naturally to the issue of equity in health care finance and delivery that we examine below.

7. INEQUALITY IN HEALTH CARE FINANCING

Inequality in health care financing is often seen as an issue of whether individuals pay for health care the same share of their respective income. Financing sources of health care vary from a country to another. Hence, the analysis of inequality in the finance of health care should bear in mind this financing structure. In Switzerland, studies which have been undertaken before or after 1996, when the health insurance system changed from the LAMa to the LAMal, examine different health care contexts. This section first analyses inequality in the costs and economic burden of health insurance, and then its redistributive effects.

In Switzerland, the health care financing system is complex. Health insurance premiums do not depend on income or on family size. This may have an important effect on the economic burden of health insurance for low income classes. However there are specific allowances that reduce the impact of these contributions for low income households, even if there are large differences among cantons with respect to the allocation of these allowances. Although comparative studies about progressivity of health care financing have been undertaken before 1996, one should expect that similar conclusions still hold now. It has been shown that Switzerland, which has a predominantly private health care financing system, has one of the most regressive structures.

7.1 THE COSTS AND ECONOMIC BURDEN OF HEALTH INSURANCE.

As described in Section 2, in Switzerland, there is no proportionality rule according to insured incomes or to family size. Under the LAMal the amounts vary by insurer and region, and previously under the LAMa they additionally varied by insured gender and age and followed the risk covering principle. These contributions represent a higher part of the budget for modest households and the elderly, and have increased more quickly than the price index over more than thirty years. Note, however, that specific allowances reduce the burden of these contributions for low income households.^a These contributions depend on the canton of residence of the household. Each canton has set up its own criterion for granting these allowances. Published reports show a large diversity between cantons, and this indicates that there is an inequity with respect to the allocation of premium allowances.

As also noted in Section 2, economic access to health insurance in Switzerland was quite satisfactory under the LAMa although it was not compulsory; by the end of the eighties, 97% of the Swiss population were insured. However, there were exceptions notably regarding immigrant workers and their families who have major difficulties in obtaining national insurance benefits (see Lehmann, Mamboury, and Minder (1988)). However, as stated before, this was a situation before the basic health insurance became compulsory within the LAMal.

In 1997, the WHO report on health (page 210) estimated the Fairness of Health Financing Contribution (FFC) Index to 0.964 for Switzerland, which was attributed the 38-40th world rank for the fairness of health financing contribution. More recently, Geoffard and Nicolet (2001) have used more recent data and a more elaborate methodology to calculate the FFC for Switzerland. The authors distinguish two scenarios depending on the reimbursement level of out-of-pocket payments. The FFC was estimated to 0.8521 if out-of-pocket payment is supposed to be completely reimbursed (100%), and to 0.9221 if out-of-pocket payment is supposed not to be reimbursed at all (0%).

^a For a study of the inequality in health insurance costs under the LAMa, see Lehmann, Martin and Gutzwiller (1986).

7.2 REDISTRIBUTIVE EFFECTS OF HEALTH INSURANCE

Most countries finance their health care through a mixture of taxes, social insurance contributions, private insurance premiums and out-of-pocket payments. The various payment sources have very different implications for both vertical and horizontal equity and on redistributive effect which is a function of both. Wagstaff et al.(1992) present the results of a ten-country comparative study of health care financing systems and their progressivity characteristics. It distinguishes between the tax-financed systems of Denmark, Portugal and the U.K., the social insurance systems of France, the Netherlands and Spain, and the predominantly private systems of Switzerland and the U.S. This was a micro-level data study which applied a common methodology and thus guaranteed a high degree of comparability in the empirical results. Furthermore, the analysis has been undertaken by research teams from the country in question. However, it is worth noting that this article is prior to the LAMal law that rendered compulsory the basic health insurance in Switzerland.

This article examines the equity in the finance of health care. It focuses on the progressivity principle, i.e. the extent to which families on higher incomes pay larger shares of their incomes towards health care.

It concludes that tax-financed systems tend to be proportional or mildly progressive, that social insurance systems are regressive and that private systems are even more regressive. Out-of-pocket payments are in most countries an especially regressive means of raising health care revenues.

But the analysis has been undertaken for each financing source of health care. Two types of indices were used in measuring progressivity: Kakwani (1977) index and Suits (1977) index. Hence, unsurprisingly, direct taxes have been found to be progressive in all countries, though the degree of progressivity varies. The countries with the most progressive direct tax systems were Portugal (Suits index equal 0.31) and Ireland (Suits index equal 0.25), and the country with the least progressive system was Italy (Suits index equal 0.094). Switzerland has been ranked 6th of the eight countries with direct tax financing.

Interpretation of results concerning the progressivity of private insurance should bear in mind the cover that private insurance buys in each country. Hence, it appears that countries where it is relied upon by the majority of the population for cover, private insurance was highly regressive. This was the case for Switzerland (Suits index equal - 0.233) and the U.S. (Suits index equal - 0.249). It was highly progressive in Portugal (Suits index equal 0.292) and U.K. (Suits index equal 0.250).

Out-of-pocket payments tend to be highly regressive means of financing health care, in all countries in the study, except Spain. Results show that out-of-pocket payments are the most regressive in the U.S. (a Suits index equal to -0.386), Switzerland (Suits index equal -0.332), and France (Suits index equal to -0.293).

So, health care finance is overall progressive in three countries, namely the U.K., Ireland, and Portugal. The U.S. and Switzerland, which are the two countries with predominantly private financing systems, have the most regressive structures. Although this result has been obtained before 1996, at a time when the LAMa was in force, one should expect that similar conclusions still hold under the LAMal, presently in force.

A more recent paper by van Doorslaer et al (1999) presents results on the income redistribution consequences of the health care financing mixes adopted in twelve OECD countries by decomposing the overall income redistributive effect (RE) into a progressivity, horizontal inequity and re-ranking component. They measure the redistributive effect of a tax RE, by computing the difference between the pre-tax and post-tax Gini coefficients. A positive value of RE indicates that the tax in question reduces the inequality, while a negative value indicates that the tax in question raises

inequality.

If all households on a given income pay the same amount of tax i.e., there is no unequal treatment of equals, RE can be decomposed as: $RE = (g/(1-g))K$, where g is the average tax rate and K is the Kakwani index of progressivity, a positive value of which indicates a progressive tax while a negative value indicates a regressive tax. The redistributive effect of a tax depends, in these circumstances, not just on how progressive the tax is i.e., on the value of K , but also on the proportion of income taken by the tax i.e., on the value of g .

This study shows that the direct taxes that finance health care are, in all countries, pro-poor in their redistributive effect. In Finland, but also the US, the redistributive effect associated with direct taxes is especially high. The redistributive effect of private insurance varies across countries, being pro-rich in France, Ireland, Switzerland and the US, especially so in the last two and pro-poor elsewhere though only in Germany and the Netherlands is it appreciably large. Switzerland seems to be very different, followed by the USA, from other countries for the redistributive effect of private insurance. Also, the redistributive effect of total payments is the weakest in these two countries.

The authors also show that out-of-pocket payments have a pro-rich redistributive impact in all countries.

As with private insurance, a major source of the income redistribution associated with out-of-pocket payments comes through vertical redistribution. In Switzerland, out-of-pocket payments in Switzerland are highly regressive.

The general finding of this study is that the vertical effect is much more important than horizontal inequity and re-ranking in determining the overall redistributive effect but that their relative importance varies by source of payment. Public finance sources tend to have small positive redistributive effects and less differential treatment while private financing sources, like in Switzerland generally have (larger) negative redistributive effects which are to a substantial degree caused by differential treatment.

8. INEQUALITY IN HEALTH CARE USE AND DELIVERY

Inequality in health care has often been measured in terms of access to, or in terms of use of health care services. When the use of health care services is chosen, one may quantify it in terms of care units like doctor visits, days of hospital stay, or in terms of expenses. This issue is closely associated with the principle of horizontal equity.^a The last part of this section deals with the relative access to and use of health care by the special category of asylum seekers and the refugees.

A comparison of horizontal equity between countries (in 1992 and 2000), examining to what extent people in equal need receive the same care irrespective of their income, showed that, in general, there is such a horizontal inequity, except in Netherlands and Switzerland, and it is a positive one. This means that lower-income groups are more intensive users of the health care system. But the results lose in significance when indirect standardization for need differences is used. Other methodological drawbacks may also be due to the definitions employed. Other results show that within Switzerland, higher hospitalisation among men under 65 years was associated with manual professions and less educated people in 1986, 1992/93 and in 1997. In Switzerland, there is another level of health use differences the intensity of which varies from one canton to another. It concerns the population category of asylum seekers and refugees, which is continuously increasing.

8.1 HORIZONTAL EQUITY

^a For a survey of the literature on equity in health care financing and delivery in relation to the concept and definition of equity, see Wagstaff and van Doorslaer (2000).

In the health care literature, the concerns for equity most often centre on the question of whether people are getting the health care that they need. One version of the principle of horizontal equity states that persons in equal need are treated the same irrespective of their income. However, a global discussion on this point does not seem to be available in the literature, due to the fact that the concept of health care need is analytically difficult to treat. Need is often either undefined or variously defined. In addition, a treatment of what health care distribution is equitable, and of what health care needs should be met in society, ultimately depends on ethical theory, or perhaps, on social justice theory. However, several theories of social justice have been proposed and it cannot be said that we have achieved a consensus on this notion.^a

Wagstaff et al. (1992) examine violations, related to income, of the principle of horizontal equity. Furthermore, they also seek to assess whether some countries come closer to achieving horizontal equity than others, and, if so, what features of health care systems seem to promote it.

Data used in this study were on the individual level, most obtained from health interview surveys. Questions about chronic illness, questions asking whether the individual's normal activities were affected by ill-health in the recall period, and questions on self-assessed health were used to measure health status. Utilisation has been measured by overall imputed expenditures for GP visits, specialist visits, and inpatient stays, weighted by their average cost.

The ranking of the six countries for which there is information on both morbidity indicators (self-assessed health and chronic illness) is virtually the same irrespective of which of the two indicators is chosen: in descending order, Spain, the Netherlands, the U.K., Switzerland, Italy, and then Denmark. Horizontal inequity (HI) values range from about -0.10 for Denmark (self-assessed health) to +0.025 for Italy (self-assessed health and chronic illness). For the self-assessed health indicator, HI was positive in the cases of Spain, the Netherlands and the U.K. Results show that if there is any inequity in the delivery of health care in these countries, it favours the less well-off.

The authors reported also the LR tests statistics and conclude that inequality exists in the delivery of health care in all countries, except the Netherlands and Switzerland (where the statistic falls below the 1% critical value). In the cases of Denmark, Italy, Spain, the U.K., and the U.S., the LR test statistic exceeds the critical value suggesting that overall in these countries there is unequal treatment for equal need, and that this inequity is income related. In the Irish case, the LR statistic is exactly equal to the critical value.

However, according to the authors themselves, these results should be read with great caution as it may well be the case that inequalities in health exist amongst the chronically sick and amongst those who perceive their health to be not good. Hence, the authors suggest that future work in this area ought to incorporate information not simply on whether chronic illness is reported, but rather on the number and type of chronic conditions reported.

In a more recent work, van Doorslaer et al. (2000), the authors refine the empirical analysis of Wagstaff et al. (1992) and present a comparison of horizontal equity in health care utilisation in ten European countries^b and the US. They used more recent data from a larger set of countries, used new methods and present disaggregated results by various types of care. The authors found that in all countries, the lower-income groups are more intensive users of the health care system. But after indirect standardization for need differences, there is little or no evidence of significant inequity in the delivery of health care overall, though in half of the countries including Switzerland, significant pro-rich inequity emerges for physician contacts. This seems to

^a For an examination of the concept of equity in health in the light of a variety of concepts employed by philosophers when discussing distributive justice, see Williams and Cookson (2000).

^b Belgium, Denmark, Finland, West German, East Germany, Ireland, Netherlands, Sweden, Switzerland, UK.

be due mainly to a higher use of medical specialist services by higher-income groups and a higher use of GP care among lower-income groups. These findings appear to be fairly general and emerge in countries with very diverse characteristics regarding access and provider incentives.

Aggregate utilization mainly reflects the hospital care pattern and is therefore also very skewed to the left, indicating that in all countries considered, the lower-income groups are the most intensive users of the health care system. If need were equally distributed across income groups, this would mean inequity favouring the lower-income groups. But we know that the incidence of self-reported ill-health (and therefore, in this approach, the need for health care) is also concentrated towards the lower end of the income distribution. The more interesting question therefore is to what extent the distribution of medical care is sufficiently skewed towards the bottom end of the income distribution to compensate for the higher needs of the worse-off. This is an empirical question which still needs to be examined, at least in the case of Switzerland.

8.2 DOCTOR VISITS AND HOSPITAL STAYS

The SHS 1992-93 shows that doctor visits and hospital stays do not make a big difference according to nationality. However, the results of the SHS 1992-93 show that the percentage of men^a under 65 years who have been hospitalised during the last twelve months is higher in manual professions (10.8% against 7.5%), lower education (12.5% against 8.5%), and slightly the same for the two income categories (9.1% against 8.2%). The corresponding pattern for the masculine population of more than 65 years gives the following rates, respectively: 15.6% vs. 18.1%; 20.1% vs. 15.9%; and 17.3% vs. 13.3%.

According to SHS 1997, one man in eight and one women in four (25 years-old and more) have had a hospital stay during the previous year. Below the age of 64 years, the hospitalisation rates are 25% to 33% higher among men of lower social classes. Among women, differences related to social classes are smaller.

Results for inpatient care utilisation comparison are also presented by van Doorslaer et al. (2000). Except for Switzerland, all indices are negative but (with the exception of the UK and Belgium) none of these is significant. In other words: the actual distribution of inpatient care utilisation is more concentrated in the lower-income groups than the one that would be expected on the basis of the distribution of the need indicators used here. But the hypothesis of no inequity cannot be rejected for most countries because the confidence intervals for the inpatient care inequity indices are much wider than for the other types of care. Note that in the van Doorslaer et al. study (2000) Switzerland is the only country which has a positive index i.e. there is less bias than expected towards use by lower income groups. But, as we mentioned earlier, the authors point out to the fact that the results lose statistical significance when indirect standardization for need differences is used.

Finally, the findings for aggregate health care utilisation presented are to a large extent determined by its largest component, i.e. by inpatient care utilisation. Again, most of the Horizontal Inequity (HI) indices are negative but very few are significantly different from zero. This means that in most of these countries' aggregate imputed health care expenditures, the method cannot detect any significant inequity in its distribution across income groups.

Note that the results presented in van Doorslaer et al. (2000) refer to one particular violation of the principle of horizontal equity, namely the one related to income. There are possible violations with respect to other characterization of social classes, namely age, gender, profession, education, and nationality which have not analysed in their

^a Because women have different reasons (delivery) to be hospitalised, their data are not presented in the SHS 92-93 analysis.

work. Consider, for example, the possible violation, related to social class defined by including profession and education, of the principle of horizontal equity. Because the average health status is worse in lower classes, health care use and hospital stays are expected to be more frequent in these population category if health care access were equal. This is not however what the SHS 1997 results show. Three men out of four and five women out of six have visited a doctor during the year before the survey date, but the number of visits does not vary by social class.

Similarly, in a previous study of Sommer and Gutzwiller (1986) an econometric model based on SOMIPOPS survey was used, the authors found that a higher education is positively correlated to the health status, and thus, that people with high education level have in general less use of health services. The quantitative effect is however quite weak: for an additional year of training, the number of doctor visits decreases by 0,8%, and the number of the days of hospitalisation by 0,1%.

Therefore, at least Sommer and Gutzwiller (1986) as well as SHS 1997 results seem to contradict the results in van Doorslaer et al. (2000) by pointing out possible violations, with respect to other characteristics of social classes than income, of the principle of horizontal equity in Switzerland. However, here again the empirical analysis of these issues under LAMal have so far not been systematically investigated. This is also the case for the use of other health services than doctor visits and hospital stays, notably for drugs consumption, psychiatric care and dental care.

Taking account of other characterization of social class than income raises an important socio-cultural issue that the works presented so far have not sufficiently taken into account. Indeed, the relation between "need" defined through health status and health care use is not necessarily straightforward. This is because even though the health status is comparable, people from different social classes may have different attitudes towards their daily practices to preserve health and to fight illness.

8.3 ASYLUM SEEKERS AND REFUGEES

As mentioned in Section 2, it is the responsibility of the Cantons to set up a health care system in which asylum seekers and refugees have a limited choice of sickness funds and of health care providers. Given the fact that the new Order 2 on asylum relative to funding is in force only since January 1999, health and health services provided for asylum seekers and refugees by the Cantons have so far not been systematically investigated. However, there are a few recent works dealing with this issue.

For instance, with the implementation of the health insurance law LAMal, in 1996, asylum seekers and refugees in the canton of Vaud have been insured through a collective contract with a particular sickness fund for which the premiums were paid by the canton. According to Pécoud (1998), the first two years have shown a real explosion of the costs. The explanation that one may put forward is two-fold. First, as explained in Section 3, under the LAMa, the canton of Vaud was among the cantons where asylum seekers received a voucher for a limited amount, which implied the existence of some form of rationing. The cost explosion is partly due to the removal of this rationing when the LAMal was put in place and partly to the general euphoria during the first years of the new health care law.

In the early 1998, however, a network project named FARMED, has been set up by a working group of several partners. The FARMED takes charge of the asylum seekers for their health care need. While these individuals cannot choose to become member of the network or not, they do not pay health insurance premiums nor deductibles, in compliance with the Order 2 on asylum relative to funding. A project for the evaluation of the health care provided by FARMED network is still in preparation.

In another cross-sectional study, Blöchliger et al. (1988) describe demographically

and clinically the asylum seekers and refugees attending health care services and try to identify main problem areas as perceived by General Practitioners (GP). According to this study, low consultation rates of asylum seekers and refugees in the majority of surgeries and high diversity of this population in respect to places of origin, education and proficiency in languages appear to be the major determinants of the difficulties in providing adequate health services to them. This study also outlines the importance of readily available information on the past medical history and on the ethnic background of these patients.

More generally, a lack of experience in caring for asylum seekers and specific training in this field seems to be the major complaint of health care providers. Improvements of specific services, such as interpreters, institutional links and culturally adapted medical care, are also thought to have an important positive impact on the efficiency and quality of health services provided to asylum seekers and refugees.

9. IMPORTANCE OF THE SOCIAL ENVIRONMENT

Several studies point out for the need of an interdisciplinary approach to reduce social inequality in health. As noted by Abelin and Ackermann (1998), it involves not only the health care sector, but other administrative sectors such as education, social services and housing construction, and is greatly influenced by measures taken on the Federal or Cantonal level. Two examples of such issues will be examined in this section: the impact of the schooling system on the extent of health inequality; and the problem of providing medical resources as solutions to social problems, especially for the elderly. Finally, the importance of social networks and social support on health and health inequality is examined.

Results show, for example, that school may have an important role of equalisation in health between teenagers. Also, an important issue in the use of health care is the tendency to provide medical solutions to social problems of the elderly, which is both expensive and inadequate. Hence, social support to the elderly by a well-balanced system of health and social welfare should help in reducing inequalities and lowering financial burdens. Similarly, social network of the individuals may have a significant effect on their health status.

9.1 IMPACT OF THE SCHOOLING SYSTEM

In an interesting contribution Vuille and Schenkel (2001) propose a study about the role of the school in the process of social equalization in the health of pre-adolescents and adolescents in the schools of the city of Bern at the beginning of the school year 1999/2000^a. Multiple logistic regression with gender, social class, ethnicity, and school climate as independent variables revealed the disappearance of social gradients by 15 years of age and the emergence of new inequalities related mainly to gender and school climate.

The data reveal a substantial advantage of boys over girls for every indicator of self-declared health, with odds ratios ranging from 1.62 to 2.34 in the 8th grade. The values for the 6th grade show similar, but not significant, pattern of differences. Non-Swiss children do not consider themselves at a disadvantage with respect to health status or health problems, but they tend to consume significantly more medicines, notably

^a Questionnaire data obtained from 578 13-year-olds and 476 15-year-olds within the frame of the evaluation of a health-promoting schools project were transformed to 30 indicators of well-being at school, health, emotional well-being, life-skills, and health behaviour and attitudes.

psychoactive substances.

Aside from gender, the most consistent predictor of good health parameters is the school social environment, particularly in the 8th grade. In schools in which pupils experience a good environment, self-declared health status is better, adolescents are more often free from specific health problems and psychosomatic complaints, and they are more likely to refrain from the consumption of psychoactive substances than their peers in schools with poor environment.

Finally, the authors conclude that a good environment in the school as experienced by the pupils was found to be associated significantly with 7 of 21 indicators in the 6th grade and with 15 out of 23 indicators in the 8th grade.

9.2 MEDICAL SOLUTIONS TO SOCIAL PROBLEMS

In a similar vein, ignoring the importance of the social environment of individuals may lead, for example, to an excess of health care use. In fact, an important issue in the use of health care is the tendency to provide medical solutions to social problems.

"Medicalization" in health care refers to the current practice of providing medical solutions to broad social problems facing the old. According to Morabia, Takla and Loew (1986), this approach is destined to bring about serious economic and socio-cultural dilemmas in the coming decades due to the ageing trends in Switzerland.

According to these authors, assigning medical answers to social needs is both expensive and inadequate. This proposition is illustrated by two aspects of Geneva's medical care system for the aged: (a) At the University Geriatric hospital a large proportion of the patients is admitted for purely social reasons ('home maintenance impossible'). The long term bed stays, medically unjustified, constrains the optimal functioning of this acute care and rehabilitation hospital. The prolonged length of institutionalisation reduces the capacity of the elderly out-patients to carry on autonomously.

This observation is confirmed by many Swiss medical and sociological surveys which reveal that institutionalisation is rarely necessary or desirable in the 10 to 20 first years of post-retirement provided there is an adequate system of social and primary care services available. (b) The drug prescription to those 65 and over consulting at the out-patient department of the Geneva University Medical Polyclinic typically amounts to excessive prescription for women and especially of psychoactive drugs. In many cases, the prescribed care appears as an unsatisfactory substitute for loneliness and the lack of regular mental or social activity.

Medicalization thus often means negation of existing social problems and marginalization in nursing homes and hospitals. According to the authors, social support to the elderly by a well-balanced system of health and social welfare emphasizing their autonomy and dignity is an alternative to medicalization. Its goals should include reducing inequalities, lowering financial burdens, rationalizing medico-social support and creating the conditions indispensable to an active independent life for the aged.

9.3 SOCIAL NETWORK AND SOCIAL SUPPORT

Similarly, Meyer (1999) argues that fight against poverty and social discrimination is a prerequisite for the improvement of health for populations and individuals. He notes that in terms of morbidity and mortality, differences between professional categories persist in Switzerland, and he emphasizes the role of the individual's social network and social support on the health status.

The author present an interesting discussion about morbidity and mortality differences between social classes based on the observation that the origin of the causality relationship between social class on one hand, and mortality and morbidity on

the other hand are always controversial. He addresses the following questions: can the relationship between social class and illness be explained through a process of social causality or a process of social drift? Which process is more pertinent?

Meyer (1999) admits that the social network of the individual may have a positive or a negative effect on his health status, and this effect varies with age, gender, and other factors. Thus, the social isolation can, for example, launch a depression, but, inversely, a depression can lead to the social isolation. However, based on his previous work (Meyer and Suter (1993)) he tends to conclude that the social factors should be regarded as reasons and health as a consequence.

10 INTERMEDIATE CONCLUSION ABOUT THE MIGRANT POPULATION

The existence of a link between social inequalities on the one hand, and mortality or morbidity, on the other hand is not disputed among the specialists. The situation relating to the health of the migrant people is a little more complex. This population reveals much larger differences than the native population as far as socialization and living conditions are concerned. In this section, we propose some emerging explanations, and give some results comparing health between native and migrant population in Switzerland.

The health experts are unanimous in asserting that the migrant population is definitely more exposed to the risk of disease. According to the SHS 1992/93 and SHS1997, the migrant population does not demand more than the Swiss population of the health care system in Switzerland. One may however note that in general the migrant population uses relatively less preventive care and has a longer duration of confinement in case of disease. It is also important to avoid confusing migrant population and asylum seekers or refugees because they are very different groups. However, the studies carried out up to now are too much limited to give a sufficient picture of the medical situation of the migrant population in Switzerland.

These differences are explained by the fact that the migrant people are often exposed to adverse conditions which can take several forms:

The migrant people belong in their majority to lower social classes or to professionally disadvantaged groups, which has negative consequences on their health. The segregation applied to women on the labour market implies that the migrant women are often found at the bottom of the scale as regards income, qualifications and professional situation. This may result into increased risks for their health.

The insecurity induced by the statute of residence involves above all an increased risk of ill health among the asylum seekers and, sometimes, among the people who benefit from a residence permit of limited duration. But the dependence of the foreign wives of Swiss citizens from the point of view of the residence status often produces negative effects on their physical and psychic health.

The people remaining illegally, who are in search of a work and who do have limited social rights, are particularly affected by the insecurity induced by the residence status

In addition to the living conditions of the migrant people, the contacts which they have with the social institutions of the host country are marked by their vision of the world and especially by their degree of control of the language (problems of communication, distribution of tasks within the household, values, religion). The way in which the migrant people are perceived in their environment also plays a role (kept out of things, discrimination). The migrant women often work in branches of the tertiary sector with little social status. This situation influences their health negatively, and the health of migrant women is definitely worse than that of the migrant men.

Lastly, the causes and consequences of the migratory process (uprooting, traumatism, escape, memories of tortures) can also have an influence on the living conditions and the health of the migrant people.

All these aspects should not make us forget that the migrants have also resources which can enable them to compensate for certain disadvantages (social networks, rather good health of the people who emigrate). But the health risks increase when the factors “different origin and social standing”, “linguistic barrier”, “precarious living conditions” (without mentioning possible trauma of war) strengthen each other with time. The health experts are unanimous in asserting that the migrant population is definitely more exposed to the risk of disease.

Incomplete epidemiological surveys made it possible to confirm only partly the health risks incurred by the migrant population. Fragmentary studies relating on the consumption of drugs, the frequency of HIV and of AIDS and on certain groups of migrants show however that the links noticed in European studies are perfectly transposable in Switzerland.

The SHS 92-93 and SHS 97, which only concerned the migrant people who spoke one of the official languages, were analysed from the migratory angle and gave the following results:

- _ the perception that the migrant people have of their health is less good than that of the Swiss people.
- _ One notes according to the results of the SHS 93 that the people of foreign origin will more often see a general practitioner, whereas they less often appeal to specialists. On the whole, however, the use of medical services is not greater in the migrant population than in the Swiss population, whereas one could expect a larger consumption of such services on behalf of the former population. According to the SHS 92/93 thus, the migrant population does not demand more than the Swiss population of the health care system in Switzerland.
- _ the SHS 97 shows in addition that, compared to the Swiss population, the migrant population consult a doctor in the event of disease or of accident rather than for prevention purposes or for advice.

On the whole, using the data provided by the SHS 92/93, one notes that the results are a little worse in the migrant population, which results in a slightly longer duration of confinement in case of a disease.

The results of other studies come to supplement those of the SHS 92-93 and SHS 97.

The numerous statistical data in this field show that perinatal mortality is higher in the groups which have been living in Switzerland a relatively short time, and that migrant women are less often referred for antenatal consultation

To clarify the situation of certain specific groups, it is important to make a distinction between migrants in search of a work and asylum seekers. These two groups are confronted in Switzerland with completely different residence and living conditions and do not have the same migratory history at all. One of essential characteristics of the people who leave other countries in search of an employment or who are recruited for this purpose is that their health status is better than the average (one speaks here about the “healthy migrant effect”).

To better appreciate the situation of this group, it is also necessary to take account of risks and diseases related to the fact that migrants frequently do in Switzerland physically demanding work (very hard physical labour, night shifts or team work). The statistics available in Switzerland and the international studies realized on this subject draw up similar reports and emphasize a significantly higher frequency of disability and industrial accidents in the migrant population.

-Generally, the refugees who have been constrained to emigrate undergo many sources of stress, such as forced displacements, war or attacks to their integrity.

These experiences are often at the origin of post-traumatic disorders of various degrees. Such disorders affect in particular the victims of tortures. The psychic disorders (and sometimes physical disorders) from which they suffer can include acute diseases or chronic pathologies little known in the host country.

From a somatic point of view, diseases such as malaria, hepatitis B or other parasitic diseases, like certain sexually transmitted diseases, are more often diagnosed among the new migrants, in particular among the asylum seekers and the refugees of extra European countries.

In conclusion, one can conclude that the epidemiological studies carried out up to now are too much limited to give a sufficient vision of the medical situation of the migrant population in Switzerland.

Another important question has to be addressed: do the problems identified result from difficulties of access to the health care system or from difficulties of communication with the specialized personnel, or are they rather caused by the pathologies induced by the migratory movements themselves? It seems relatively clear that only a combination between measures adapted to the target groups and the improvement of the access to the health services will allow taking up the challenges to come.

11. CONCLUSION

This survey shows that health status inequalities between men and women, age groups and socio-economic classes (occupation, education, income) have been recognised by all the studies that have been undertaken in Switzerland, whatever were the definitions and measures used. However, studies done at the international level show that in comparison with other developed countries, health status inequalities appear to be lower in Switzerland.

It is hard to speculate on why Swiss health status inequality indicators are relatively low. Several explanations are possible, although this issue has not been systematically investigated. It may be argued for instance, that despite the private insurance based system, the combination of the following characteristics of the health insurance reduce the health status inequality indicators: *i)* the basic insurance is compulsory; *ii)* all applicants must be accepted without any reservations, *iii)* Under the “basic insurance”, all sickness funds pay for the same benefit (no more nor less than the “basic package”), *iv)* premiums contributions are equal within a fund and cannot be graded according to selected parameters (e.g. age, gender, etc.), *v)* most of the outpatient benefits are covered by the “basic insurance”, in other words, there is no need to buy a supplemental insurance to have a better access to outpatient care, all the more so since the insured can choose freely their doctor and the hospital, *vi)* the banning of health insurers from selling collective insurance.

The above characteristics may explain why, even compared with the USA, the only other largely private insurance based system, Swiss health status inequality indicators are relatively low. However, other explanations are possible. In fact, it has recently been argued that the social cohesion which prevails in Switzerland may be an important explanatory factor.

However, the results regarding the foreign immigrants are not always clear-cut. Low death-rates and good health status may be due, at least partially, to the “healthy emigrant” effect. In a number of studies this effect seems to be stronger than the effect of the often negative factors to which immigrants are exposed in the host country.

This survey also shows that comprehensive empirical analysis of inequity in health care finance and delivery in Switzerland under LAMal are seriously lacking. It is true

that partial results have been obtained by the analysis of SHS 97, but these results corresponds to a situation where the health insurance law has just changed from LAMa to LAMal. In addition, empirical works on violations of the principle of inequity, even the most recent one, are limited to violation with respect to income. Therefore, investigations about violations of this principle with respect to other characteristics of the population, such as gender, age, occupation, education and nationality are missing and urgently need to be systematically investigated.

For instance, as mentioned earlier, one possible source of inequality in health care access is the fact that free choice of the physician does not exist for patients in hospital wards, whereas supplemental insurance provides this possibility.

Also, the fact that premiums cannot be graded according to the income of the insured person is a regressive factor. However, it may be compensated by the fact that some persons whose financial circumstances are modest are entitled to state assistance with premiums. However, persons whose financial circumstances are modest and who are not entitled to state assistance with premiums may purchase insurance with a low premium associated with a high deductible. But in some cases, given the financial burden associated with high deductibles, some members of this particular category of the population may refrain from using some necessary health of health care services. Also, since the conditions under which individuals are entitled to state assistance as well as the amount of the subsidy they receive depend on the canton of residence. Therefore, the canton of residence may be a source of inequity in health care financing and access to health care.

As a final comment, we would like to point out to the total lack of studies, to our knowledge, on the equity of health care finance and with respect to the “oldest old” population in Switzerland. In our view, this one of the most serious problem to be addressed given the demographic trends and the way Switzerland finances health care as well as home care and nursing homes. In fact, as indicated in several places of this survey, life expectancy in Switzerland is one of the highest in the world. Recall that, in 2000, life expectancy at birth was 76.9 years for men, and 82.6 years for women; hence revealing that women live about 5.7 years more than men in Switzerland. This is also true for life expectancy at the age of 65 years, which was 15.8 years for men and 20.1 for women in 1987. Also, as indicated in this survey, differences in life expectancy without incapacity are expected to exist not only between men and women, but also between social classes because of the existing gaps in mortality and in disability frequencies between social classes. It has also been pointed out that, in the population over 65 years, 23% of men and 19% of women live with a physical handicap; the prevalence even exceeds 55% for people beyond 85 years. It is necessary to take also in consideration that the chronic deficiencies increase strongly with age. Thus, more than 80% of the “oldest old” population, that is the population beyond 80 years, endures such a deficiency. Chronic health problems increase with age, but women are more severely concerned than men in all age classes. Important gaps are noticed according to socio-economic classes of the elderly.

Thus, among the “oldest old” population, violations of the principle of horizontal equity is expected to exist not only with respect to gender, but also with respect to social classes because of the complexity of the system for financing health care, home-care and nursing homes. In fact, as noted in Section 2, the cantons are responsible for health services, preventive care and public health regulations, whereas municipalities intervene mainly in the services to senior citizen, social assistance and home-care. In some situations, the cantons or municipalities may ration or even exclude a given home-care service or a category of services on grounds of financial difficulties. This can lead to discrimination against individuals among the elderly who cannot afford a service, either by direct payment or through a supplemental insurance scheme.

More generally, there is an urgent need to carry out studies regarding the health care as well as other type of care needs of the elderly population in Switzerland, by taking into account the demographic forces associated with longer life and a growing older population.

REFERENCES

- Abelin Th, Schlettwein G, Gsell D, Minder Ch, et al (1985): « Die Sozialmedizinische der Betagten unter städtischen Bedingungen ». Institut für Sozial- und Präventiv-Medizin der Universität Bern, 1985.
- Beer Valeria, Brigitte Bisig and Felix Gutzwiller (1993): " Social class gradients in years of potential life lost in Switzerland", *Social Science & Medicine*, Volume 37, Issue 8, October 1993, Pages 1011-1018
- Blöchliger, C., Th. Junghanss, R. Weiss, Ch. Herzog, P.-A. Raeber, M. Tanner and Ch. Hatz (1998), "Asylsuchende und Flüchtlinge in der hausärztlichen Praxis: Probleme und Entwicklungsmöglichkeiten, „ Sozial- und Präventivmedizin, 43, pp. 18-28.
- Bucher, H; Gutzwiller, F: "Health behavior and social inequality in the Swiss population. Results from the SOMIPOPS study (Sociomedical Model Indicators of the Population of Switzerland) [Gesundheitsverhalten und soziale Ungleichheit in der Schweizer Bevölkerung. Ergebnisse aus der SOMIPOPS-Studie], *Schweizerische Medizinische Wochenschrift*, Volume 117, Issue 41, October 10, 1987, Pages 1583-1590.
- Buchmann M, Karrer D, Meier R (1985): Der Umgang mit Gesundheit und Krankheit im Alltag, Haupt, Bern
- Cavelaars, A E; Kunst, A E; Geurts, J J; Crialesi, R; Grötvedt, L; Helmer, U; Lahelma, E; Lundberg, O; Matheson, J; Mielck, A; Mizrahi, A; Mizrahi, A; Rasmussen, N K; Regidor, E; Spuhler, T; Mackenbach, J P. " Differences in self reported morbidity by educational level: a comparison of 11 western European countries", *Journal of Epidemiology and Community Health*, Volume 52, Issue 4, April 1998, Pages 219-227.
- Cavelaars, A E; Kunst, A E; Geurts, J J; Helmer, U; Lundberg, O; Mielck, A; Matheson, J; Mizrahi, A; Mizrahi, A; Rasmussen, N; Spuhler, T; Mackenbach, J P (1998): "Morbidity differences by occupational class among men in seven European countries: an application of the Erikson-Goldthorpe social class scheme, *International Journal of Epidemiology* Volume 27, Issue 2, April 1998, Pages 222-230-
- Degrade A., Testa-Mader A. and Clerici, N. (1999): "Mortality in the Swiss and foreign immigrants in the Canton of Ticino, „ *Epidemia e Prevenzione*, 23 (2): 84-9
- Galobardes, B, Morabia A, and Bernstein M.S. (2000), "Statut socio-économique: un facteur de risque indépendant", *Médecine et Hygiène*, N° 2316 du 4-10-2000.
- Geoffard, P.Y. and Nicolet, Ch. (2001) : « Fairness of health financing in Switzerland: Computing the WHO index », *Mimeo*, IEMS, University of Lausanne.
- Gillian P. (1983): *Rentiers AVS- une autre image de la Suisse*, Réalités sociales, Lausanne, 1983.
- Gillioz L.(1980), « Campagne pour la prévention des maladies cardiovasculaires: les déterminants sociaux de la participation à l'examen de santé initial ». *Soz. Präv. Med.* 25, 250-257-

- Horn-Kullak, B; Abplanalp, A; Horn-Müller, B. (1989): "Changes in medical care in the narrow Bern Oberland since the turn of the century [Der Wandel der ärztlichen Versorgung im engeren Berner Oberland seit der Jahrhundertwende], *Schweizerische Rundschau Fur Medizin Praxis = Revue Suisse de Medecine Praxis*, Volume 78, Issue 44, October 31, 1989, Pages 1231-1237-
- Junker Christophe, Werner Fischer, Christophe Koller, Roland Calmonte (2000): in « ENQUETE SUISSE SUR LA SANTE 1997, santé et comportements vis-à-vis de la santé en Suisse", Office Fédéral de la Statistique, Neuchatel, pages 65-126.-
- Junter Christophe, Christophe Minder (1996): in "ENQUETE SUISSE SUR LA SANTE 1992-93, Analyse compare Vaud-Suisse", Institut Suisse de la santé publique (ISP) Lausanne, pages 113-132.-
- Kakwani N.C. (1977) : "Measurement of tax progresivity: An international comparison", *Economic Journal*, 87, 71-80.
- Kunst A,E; and Mackenbach, J, P (1994): "The size of mortality differences associated with educational level in nine industrialised countries", *American Journal of Public Health*, June 1994, vol.84, N°6, p.932-937-
- Kunst AE and JP Mackenbach (1994), "International variation in the size of mortality differences associated with occupational status," *Int J Epidemiol* 23, pp.742-750
- Kunst AE, Cavelaars AEJM, Groenhof F, Geurts JJM, Mackenbach JP, (1996): EU Working Group on Socio-economic Inequalities in Health. Socio-economic inequalities in morbidity and mortality in Europe: a comparative study. Rotterdam: Erasmus,University,1996.
- Kunst Anton E., Feikje Groenhof and Johan P. Mackenbach (1998): "Mortality by occupational class among men 30-64 years in 11 European countries", *Social Science & Medicine*, Volume 46, Issue 11, 1 January 1998, Pages 1459-1476.-
- Kunst, A E; del Rios, M; Groenhof, F; Mackenbach, J P(1998): " Socioeconomic inequalities in stroke mortality among middle-aged men: an international overview. European Union Working Group on Socioeconomic Inequalities in Health Stroke; a Journal of Cerebral Circulation, Volume 29, Issue 11, November 1998, Pages 2285-2291-
- Kunst, A E; Groenhof, F; Mackenbach, J P; Health, E W (1998):"Occupational class and cause specific mortality in middle aged men in 11 European countries: comparison of population based studies. EU Working Group on Socioeconomic Inequalities in Health", *BMJ (Clinical Research Ed.)* Volume 316, Issue 7145, May 30, 1998, Pages 1636-1642-
- Lehmann Ph, Scheder P.A., Junod B. (1983), « Données statistiques sur la population à l'assurance invalidité dans le canton de Vaud en 1981. IUMSP, Lausanne, 1983.
- Lehmann Philippe, Jean Martin et Félix Gutzwiller (1986): "Inégalités sociales face à la santé et à la maladie: un sujet qui mérite études et réflexion en Suisse aussi", *Médecine et Hygiène*, 44, 1921-1928.
- Lehmann Ph., Mamboury C., Minder Ch. E. (1988), "Les inégalités sociales face à la santé et la maladie en Suisse, *Cahiers médico-sociaux* Volume 32, N° 1, 3-59, 1988.

- List Christian (1999): "Multidimensional Inequality Measurement: A Proposal", Nuffield College Working Paper in Economics, Oxford, U.K.
- Luginbühl E, Schlettwein-Gsell D. und Abellin Th, (1985): "Die sozialmedizinische Lage der Betagten in der Schweiz- IV, Krankheiten innerer Organe als Ursache von Behinderungen bei Betagten, Institut für Sozial und Präventivmedizin der Universität Bern.
- Mackenbach JP and AE Kunst, (1997): "Measuring the magnitude of socio-economic inequalities in health: an overview of available measures illustrated with two examples from Europe". *Soc Sci Med* 44 (1997), pp. 757-771.
- Mackenbach, J P; Kunst, A E; Cavelaars, A E; Groenhof, F; Geurts, J J (1997): "Socioeconomic inequalities in morbidity and mortality in western Europe. The EU Working Group on Socioeconomic Inequalities in Health", *Lancet*, Volume 349, Issue 9066, June 7, 1997, Pages 1655-1659-
- Maschewsky-Schneider, U; Klesse, R (1993): "Life conditions and health behavior of socially disadvantaged women: implications of an action-theoretic model of social structure for health research, [Lebenslagen und Gesundheitshandeln von sozial benachteiligten Frauen: Die Bedeutung eines handlungstheoretischen Modells der Sozialstruktur für die Gesundheitsforschung], *Sozial-Und Präventivmedizin*, Volume 38, Issue 3, 1993, Pages 156-164.
- Meyer Peter C. (1999): "Les déterminants sociaux et structurels de la santé", in *Médecine Sociale et Préventive*, p.451-472.
- Micheli, A; Gatta, G; Verdecchia, A (1997): "Studying survival of cancer patients in different populations: its potential and role", *Tumori*, Volume 83, Issue 1, January - February 1997, Pages 3-8.-
- Minder Ch. E (1985): "Analyse de la mortalité selon la profession en Suisse (IMSP Berne, et OFS, Colloque à l'IUMSP, Lausanne.
- Minder ch, Beer V, Rehmenn R (1986): "Sterblichkeitsunterschiede nach sozioökonomischen Gruppen in der Schweiz 1980, 15 bis 74 jährige Männer, *Soz. Präventivmed* 31, 216-219.
- Morabia Alfredo, Hilke Takla, Francois Loew (1986): Medical care and social support for the elderly in Switzerland: Imbalance and mix, *Social Science & Medicine*, Volume 23, Issue 12, 1986, Pages 1327-1332-
- Murray, C J; Gakidou, E E; Frenk, J.(1999): "Health inequalities and social group differences: what should we measure?" *Bulletin of the World Health Organization*, Volume 77, Issue 7, 1999, Pages 537-543. World Health Organization, Geneva, Switzerland.
- OECD (1994), « Switzerland », in *The Reform of Health Care Systems: A Review of Seventeen OECD Countries*, Chapter 20, Paris: OECD.
- Office Fédéral de la Statistique (OFS) (1982): *Examen de gymnastique lors du recrutement 1982*, OFS, 765e fascicule, Berne.
- Office Fédéral de la Statistique (OFS) (2002): *Annuaire statistique de la Suisse, Edition 2002*, ISBN: 3-85823-950-X, Berne.
- Pécoud, A.(1998): "Farmed: un réseau de santé pour les requérants d'asile:", *Cahiers du médecin vaudois*, n°4, p.7-8.

- Polikowski Marc, Brigitte Santos-Eggimann (2002): "How comprehensive are the basic packages of health services? An international comparison of six health insurance systems," *Journal of Health Services Research & Policy*, volume 7, Issue 3, July 2002, pages 133-143.
- Sommer Jürg H; Gutzwiller Félix (1986): "Economie et efficacité du système Suisse de santé", Résultats du Programme National de Recherche N°8, version française établie par B. Eggimann et F. Paccaud. Editions Hans Huber, Berne.
- Suits, D. (1977), "Measurement of tax progressivity", *American Economic Review*, 67, 747-752.
- Swiss Federal Social Insurance Office (1997), *Sickness Insurance in Switzerland*, Bern.
- Valkonen T (1989): "Adult mortality and level of education: a comparison of six countries," In: Fox AJ, ed. *Health inequalities in European countries*. Aldershot: Gower Publishing Company Limited, 1989: 142--62.
- Van Doorslaer, E., Wagstaff, A., van der Burg, H., Christiansen, T., Citoni, G., Di Biase, R., Gerdtham, U.-G., Gerfin, M., Gross, L., Hakinnen, U., (1999): "The redistributive effect of health care finance in twelve OECD countries", *Journal of Health Economics*, Volume 18, Issue 3, June 1999, Pages 291-313
- Van Doorslaer Eddy, Adam Wagstaff, Hattem van der Burg, Terkel Christiansen, Diana De Graeve, Inge Duchesne, Ulf-G Gerdtham, Michael Gerfin, Jose Geurts, Lorna Gross, Unto Hakkinen, Jurgen John, Jan Klavus, Robert E. Leu, Brian Nolan, Owen O'Donnell, Carol Propper, Frank Puffer, Martin Schellhorn, Gun Sundberg n, Olaf Winkelhake (2000): "Equity in the delivery of health care in Europe and the US", *Journal of Health Economics* 19, p.553-583.
- Wagstaff, A, van Doorslaer, E; Calonge, S; Christiansen, T; Gerfin, M; Gottschalk, P; Janssen, R; Lachaud, C; Leu, R E; Nolan, B; et al. (1992): "Equity in the finance of health care: some international comparisons", *Journal of Health Economics*, Volume 11, Issue 4, December 1992, Pages 361-387
- Wagstaff, A. and van Doorslaer, E. (2000), "Equity in health care finance and delivery," in A.J. Culyer and J. P. Newhouse (Eds.) in *Handbook of Health Economics*, Vol 1B, Elsevier Science.
- Weiss Walter (1993): *La santé en Suisse*, Office Fédéral de la Santé Publique, Editions Payot, Lausanne.
- Williams, A. and R. Cookson, (2000), "Equity in health," in A.J. Culyer and J. P. Newhouse (Eds.) in *Handbook of Health Economics*, Vol 1B, Elsevier Science.
- Zimmermann Erwin, Thomas Spuhler (1996): in "ENQUETE SUISSE SUR LA SANTE 1992-93, Analyse comparée Vaud-Suisse", Institut Suisse de la santé publique (ISP) Lausanne, page1.