

Sustainable medicine

Position paper issued by the
Swiss Academy of Medical Sciences (SAMS)

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0. Executive Summary

Today's medicine – a victim of its own success – faces ever-growing and increasingly costly demands. But medical services cannot expand indefinitely, as the financial resources required to pay for them are ultimately limited. The challenge lies in ensuring the long-term viability of the values, goals and tasks of medicine, so that high-quality medical services remain available to meet the health needs of future generations. This is the aim of "sustainable medicine".

In its current form, medicine is not sustainable, and there is thus an urgent need for innovative ways of tackling the problem. This position paper is designed to raise awareness of the issue of sustainability among health system actors, and to stimulate the necessary political debate.

In the position paper, five factors are identified which undermine the sustainability of medicine and, at the same time, a series of measures are outlined which would promote greater sustainability:

1. *Medical interventions do not always have a clear benefit, or the benefits are frequently overestimated or misinterpreted.*

For existing and new treatments, a benefit is to be demonstrated on the basis of patient needs. This should be achieved with the aid of independent Health Technology Assessment (HTA), expansion of the activities of the Swiss Medical Board and the development of health services research. Of key importance in this context is the triple-e concept (evidence, ethics, economics), which also encompasses legal and social aspects such as equitable access to medical services. Reimbursement should only be provided for such services if they meet these criteria.

2. *Medicine arouses – and is confronted with – unrealistic expectations.*

There is a need for independent guidelines which permit shared decision-making between physician and patient. The professional associations are requested to draw up a list of interventions which are unnecessary and can therefore be dispensed with.

3. *The availability of health personnel resources is not assured.*

Anachronistic turf wars among different groups of health professionals should be eliminated. In addition, an appropriate grade/skill mix is to be promoted by means of a coordinated approach to basic/postgraduate training and continuing education for health professionals and through a new legal framework for tariff and salary structures.

4. *The health system does not have unlimited financial resources.*

Appropriate deployment of resources requires the establishment of registries, outcome research and a focus on patient benefits. In addition, there is a need for political debate to resolve the question of what level of costs is considered acceptable.

5. *Perverse incentives often arise within the health system.*

Perverse incentives may arise, for example, as a result of different financing schemes for outpatient versus inpatient care, home care (Spitex) and nursing homes; fee-for-service systems; and flat-rate payments (diagnosis-related groups).

What is required is a new financing system oriented towards quality, efficiency, equitable access and overall economic costs. Such a system should also transcend cantonal boundaries and help to prevent overmedicalization.

This position paper is addressed primarily to health professionals (physicians, nursing staff, therapists) and also to other health system actors (e.g. policymakers, administration, insurers, research institutions). The extent to which the proposed measures have been implemented is to be assessed at regular intervals.

1. Background

Recent decades have seen a significant expansion of the health system in Switzerland: not only has the number of physicians, nurses and other health professionals risen markedly relative to the size of the population, but – thanks to numerous advances in technology and pharmacology – improvements in the prevention, diagnosis and treatment of many acute and chronic diseases and disorders have led to enhanced quality of life and increased life expectancy.

1.1. *The "Future of medicine in Switzerland" project*

There is no doubt that today's medicine is highly successful. At the same time, it is confronted with ever-growing demands: medicine is expected to take into account not only the well-being of individual patients, but also ongoing scientific developments, the needs of society and economic constraints. In 1999, faced with this situation, the Swiss Academy of Medical Sciences (SAMS) launched a project on the "Future of medicine in Switzerland".

In 2004, as part of this project, the SAMS published a report entitled "Goals and tasks of medicine at the beginning of the 21st century". This document set out key concepts and definitions (including health, disease, medicine and the health system; see below), outlined the fundamental values of medicine (respect for human dignity and autonomy, the primacy of patient welfare, non-maleficence, solidarity) and defined the goals of medicine, taking as its starting point the goals formulated in a Hastings Center report published in the mid-1990s:

- The prevention of disease and injury and promotion and maintenance of health.
- The relief of pain and suffering caused by maladies.
- The care and cure of those with a malady, and the care of those who cannot be cured.
- The avoidance of premature death and the pursuit of a peaceful death.

The SAMS report also described the tasks which are to be performed by medicine, or by health professionals, in order to achieve these goals.

The central message of the report finds apt expression – seven years later – in the following statement, made by a physician from French-speaking Switzerland: "Any care project must integrate the physical, mental, and social dimensions of the individual. Treating a case of pneumonia and sending the patient back to the gutter, penniless and homeless, is not treating the human being, but his disease. Solidarity must continue to be the driving force for the maintenance of health and of all the care required both by the population and by the individual."

1.2. *Sustainability: a new challenge*

Following the important conceptual clarification provided by the "Future of medicine in Switzerland" project, the challenge now lies in ensuring the long-term viability – or, to use the term borrowed from ecology, "sustainability" – of the values, goals and tasks of medicine, as originally defined for society as a whole in the 1987 Brundtland Report:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it

two key concepts:

- The concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
- The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."

From the medical profession, the SAMS has repeatedly received signals to the effect that medicine in its current form is not sustainable. In 2004, the key issues were highlighted by Daniel Callahan – one of the leading contributors to the Hastings Center report on "The Goals of Medicine" – in a striking essay entitled "Sustainable medicine". For Callahan, the main problem lies in the Western idea of progress: "translated to medicine, [this idea] sets no limits on the improvement of health, defined as the reduction of mortality and the relief of all medical miseries". However, as Callahan recognizes, unlimited progress cannot be paid for with finite funds, and so a finite vision of medicine is required – "one that does not try to overcome aging, death, and disease, but tries to help everyone avoid a *premature* death and to live decent, even if not perfect, lives". Sustainable medicine shifts its focus "from length of life to quality of life".

The SAMS was prompted by these reflections to appoint a working group, led by Daniel Scheidegger of Basel, to prepare a position paper on "Sustainable medicine". This work also forms part of the "Sustainable healthcare" project launched at the beginning of 2011 by the Swiss Academies of Arts and Sciences.

On the model of the Brundtland Report, sustainable medicine could be defined as follows: "Sustainable medicine is medicine that meets the needs of the present without compromising the ability of future generations to meet their own needs." Put differently, medicine is sustainable if it can ensure that high-quality medical services will remain available to meet the health needs of future generations.

1.3. "Sustainable medicine" versus "Sustainable health"

Both health professionals and patients are frequently unaware that healthcare makes only a modest contribution to public health – estimated at around 10–15% by the epidemiologist G. E. Alan Dever in 1976. (The contribution of medicine to health-related quality of life is, of course, far higher in people with chronic diseases and disabilities.) A much greater influence on health is exerted by other factors, namely socioeconomic conditions and lifestyle (culture, education, economic situation, nutrition), estimated at approx. 40–50%, genetic constitution (approx. 20–30%) and the environment or ecosystem (approx. 20%).

In the light of the above, the working group was agreed that "sustainable health" is of greater importance than sustainable medicine. If the following discussion is nonetheless confined to medicine, this is because the group's primary expertise and remit lies in this area and, at the same time, it is aware that the realization of sustainable health is not just a responsibility of medicine, but of society as a whole and of politics in particular.

In this context, a fundamental question arises: to what extent is sustainable medicine, or sustainable health, possible in a non-sustainable society such as ours. The working group's answer to this question was that health professionals must assume their share of responsibility for sustainability not only in their professional activities, but also as citizens.

1.4. Procedure adopted

The working group considered the issue in depth at a number of meetings. Following a review of the literature and detailed discussions, it produced an initial draft of the position paper. Selected experts were then invited to comment on this draft at a hearing. On the basis of this feedback, a finalized version was prepared, which was discussed at a meeting of the SAMS Executive Board on 3 September 2012 and subsequently adopted.

In the course of its discussions, it became clear to the working group that key terms are sometimes used in different ways. In the interests of a pragmatic approach, the working group agreed to employ the definitions proposed in the report on "Goals and tasks of medicine at the beginning of the 21st century". Of central importance for the present document are the definitions of "health"¹ and "medicine"². Moreover, as understood by the SAMS, medicine encompasses not only the work of physicians, but also nursing and other therapeutic activities (e.g. physiotherapy, pharmacy).

In what follows, the working group first describes the factors which it sees as threatening the sustainability of medicine. It then outlines possible measures which would promote greater sustainability.

The position paper is addressed primarily to health professionals (physicians, nursing staff, therapists) and also to other health system actors (e.g. policymakers, administration, insurers, research institutions). After publication, the extent to which the proposed measures have been implemented is to be assessed at regular intervals. If appropriate, the document will also be revised or expanded.

¹ Numerous definitions of health exist. In the above-mentioned report, the following definition is used: "Health is a steady state which the individual constantly seeks to establish with his environment in order to optimize his well-being (dynamic process). In this steady state, the health status at any given time is influenced by four dimensions – biological/genetic factors, medical/technological possibilities (healthcare), lifestyle and environmental factors." The working group also finds the following definition helpful: "Health is the ability to adapt and to self manage in the face of social, physical and emotional challenges."

² "Medicine ... seeks to cure the sick or alleviate their suffering. To this end it defines its values, its tasks and its instruments. Treatment and care of patients, research and teaching are its three most important areas of activity. Medicine always takes place within particular social structures and is embedded in a health system by which it is influenced and which it in turn helps to shape. In order to perform its tasks, medicine is dependent on partnership with other social systems. It therefore also forms part of the economic and the political sphere."

2. Factors undermining the sustainability of medicine

2.1. *Medical interventions do not always have a clear benefit, or the benefits are frequently overestimated or misinterpreted*

Example: Radical prostatectomy is one of the therapeutic options for prostate cancer. This procedure can be performed using open, laparoscopic or robotic-assisted laparoscopic surgery. Although there is no evidence to date that the robotic-assisted technique offers any advantages, hospitals feel obliged to purchase the expensive equipment because the method has been promoted by the manufacturer in the lay press. It is said that many patients inquire about this method during preparatory consultations and select a hospital accordingly. This means that, for urology clinics, the acquisition of costly equipment with as yet unproven benefits becomes important to their continued success in this segment.

Very often in today's medicine, "everything" is done to treat patients – regardless of whether this is appropriate in a given situation. This "maximalist" approach to medicine can be attributed to the following factors, among others:

- Demand for medical services is influenced to a great extent by service providers. In the current fee-for-service system, there are no financial incentives for physicians, particularly in the outpatient and private insurance sectors, to recommend the optimum rather than the maximum for their patients.
- Technological progress is constantly producing new intervention options; use of these methods is not only lucrative (see above), but is generally soon regarded as "state of the art", even in the absence of any supporting evidence.
- Patients are well informed about the whole range of possible diagnostic and therapeutic measures which may be contemplated for a particular condition, and insist – not always rightly – that they should be performed.
- A defensive attitude on the part of the medical profession frequently leads to the performance of additional tests or treatments which are not strictly indicated, so as not to miss something rare and then be faced with a dissatisfied patient or even a lawsuit.
- It is often easier to comply with patients' requests for further investigations or treatments than to convince them that they are unnecessary or provide no additional benefit; such efforts may only result in a patient changing physicians.
- Many clinics and practices tend to subscribe to the idea that "doing something is better than doing nothing".

The primacy of patient welfare – which can be seen as equivalent to "benefit" – is one of the fundamental values of medicine. The term "benefit" is defined by the Institute for Quality and Efficiency in Health Care (IQWiG) as "causally determined positive effects" of a medical intervention with regard to patient-relevant outcomes, in comparison with a clearly defined alternative treatment, placebo or no treatment. Such effects may take the form of improved health status, a shorter duration of illness, a longer lifespan, reduced side effects or improved quality of life.

In evaluating the efficacy of a new treatment, the right endpoints are not always chosen, i.e. those which reflect actual patient benefit. In general, it would be more important to know whether or what proportion of patients gain independence as a result of treatment (for example, whether they are no longer bedridden or become fit for work or sport), rather than

being informed about the number of months of "progression-free survival". This would also be a prerequisite for being able to recommend to patients the treatment that best meets their needs.

For numerous long-established medical interventions, studies demonstrating a benefit are lacking. This is by no means trivial: interventions offering no (additional) benefit are not merely "non-beneficial" – they may even involve a risk of adverse effects or complications; a case in point is stent implementation (rather than medical therapy) for the treatment of stable coronary artery disease.

In cases where studies do demonstrate a benefit for an intervention, the problem is often that the benefit is expressed in relative terms ("20% improvement") rather than in absolute terms. Not infrequently, this is used in efforts to bias the preferences of physicians or their patients. In addition, different formats are sometimes used to present the likelihood of benefits and the risk of harms, with the former being reported in relative terms (i.e. large numbers or percentages) and the latter in absolute terms (i.e. small numbers). Frequently, both physicians and patients are then likely to misinterpret such statements.

2.2. *Medicine arouses – and is confronted with – unrealistic expectations*

Example: In mid-May 2012, it was reported in the Swiss daily press that a foreign ice hockey player who had enjoyed a successful career in Switzerland had undergone artificial heart implant surgery at a US hospital and was waiting for a heart transplant. We have got used to reading reports about celebrities whose lives have been saved thanks to advances in medicine. It was mentioned at the end of the article that another 900 patients at the same hospital were on the waiting list for a heart transplant. It will not be possible, within the New York region, to find and successfully transplant suitable donor organs for these 900 patients.

Increasingly lacking in contemporary Western society is an awareness of the irrevocability of the human condition as life suspended between birth and death. It is no longer taken for granted that while medicine can ease our lives, it cannot alter the basic facts of existence.

From time immemorial, curing and caring have been the central tasks of medicine. Given the limited scope of medicine until a century ago, the greatest weight was attached to caring. With the progress of medicine, and technological advances in particular, the emphasis has shifted towards curing. Today, medicine is expected to provide a cure. As noted in the 2004 SAMS report, "Owing to the technologization of medicine, the 'cure' aspects are highly valued, while the importance of 'care' aspects is diminishing."

The tragic irony is that, as a consequence of medical progress, dying itself has become complicated. The more medicine is capable of doing, the more difficult it is to forgo what is possible at the right moment; this difficulty confronts not only physicians, but also the gravely ill and their relatives. Clearly, *more* medicine can become too much, and what is often lacking in everyday practice are reliable methods of recognizing the point at which *more* becomes *less*. Strategies for appropriately resolving the tensions between the formidable capabilities of medicine and the end of life are hard to find.

2.3. *The availability of health personnel resources is not assured*

Example: Our health system is already experiencing shortages of qualified personnel in all professional groups. To date, it has been possible to defer the problem somewhat thanks to heavy recruitment abroad. But in the years ahead, the proportion of the population over retirement age in

Switzerland will rise sharply, with a corresponding increase in the prevalence of chronic illness and dementia. The demand for staff in old people's and nursing homes will increase accordingly: by 2020, at least 15,000 additional employees will be required. In the residential elderly care sector, it is already difficult to find qualified staff in Switzerland, and so staff are increasingly being recruited abroad.

In any health system, health personnel are the most important resource. The effectiveness and quality of care services are directly related to the number of health professionals available and their qualifications. In a study published in 2009, the Swiss Health Observatory (Obsan) notes that Switzerland's health system will face enormous quantitative and qualitative challenges over the coming two decades in ensuring the availability of sufficient qualified personnel. Firstly, it needs to nurture a new generation of health professionals, as a large proportion of the current workforce will be reaching retirement age over the next 20 years. Secondly, it will need to be able to respond to increased demand for care services due to ageing of the population. In this context, the question arises whether health professionals are optimally distributed among the various areas of care/specialties in Switzerland. There is also the problem of attrition, with qualified staff moving into other sectors or health systems in this country or abroad (complementary medicine, wellness), or leaving the employment market altogether. Finally, health professionals will need to adapt to qualitative changes which necessitate a reorientation of care models: chronic conditions, which are becoming increasingly prevalent, require different forms of care than acute illnesses.

The recruitment of health professionals abroad is not a sustainable way of meeting personnel requirements. In addition, there is already a global shortage of qualified staff in the health sector, which has been further exacerbated by a generational change in the medical profession (many young physicians now wish to work part-time). Apart from being unsustainable, the recruitment of health professionals abroad is highly problematic since the countries situated at the end of this chain cannot draw on a pool of qualified personnel elsewhere. In most cases, the countries concerned already have major problems to contend with in their health systems.

2.4. The health system does not have unlimited financial resources

Example: In 2010, the Federal Supreme Court ruled that a health insurer was no longer obliged to reimburse the costs of the drug Myozyme for an elderly female patient with Pompe disease (a rare metabolic disorder), as the treatment had not proved sufficiently effective.

A particularly striking aspect of this case – though not material to the ruling – was the Court's weighing of costs and benefits. According to the Court, the mandatory health insurance scheme is not required to – and indeed could not – pay for every possible medical intervention to prolong a human life. Under the principle of legal equality, treatment would have to be provided for everyone in a comparable situation. In practice, however, this would mean that all patients with impairments similar to those associated with Pompe disease would be entitled to claim similarly effective and expensive treatments. But this would cost CHF 90 billion a year – more than Switzerland's total expenditure on health.

By international standards, Switzerland's health costs are relatively high, both in absolute terms and as a proportion of GDP. Since 2000, health costs have increased roughly in line with economic growth. It is not correct to speak of "uncontrolled growth", or even a "cost explosion", though these expressions are widely used in the health policy debate.

The question of whether the cost level is too high can only have a political answer: in future, do we still want basic insurance to include the freedom to choose service providers, as well as access to almost all medical services without waiting times? Do we want to preserve or even expand the current range of services covered by basic insurance? Do we want to maintain a

highly federalist system? If the answer given by the majority of the population to these questions is yes, then this also means accepting increasingly expensive healthcare.

Another question arising with regard to costs is that of resource allocation: are the funds deriving from health insurance premiums and tax revenues really deployed in such a way as to maximize health benefits for the public? As studies are lacking on how the quality of care is affected by resource allocation, we cannot answer this question. More evidence-based knowledge is required to determine where investments should be made and where it would be appropriate to expand or scale down care structures.

Two thirds of all financing comes from out-of-pocket payments and per-capita premiums under the mandatory health insurance system. In addition, recent years have seen increases in health insurance premiums outpacing overall growth in health expenditures. This is due to a shift in services away from the inpatient towards the outpatient sector, where all costs are covered by health insurers. It needs to be asked whether this distribution of financing is sustainable, as it imposes a disproportionate burden on low and mid-income households.

2.5. Perverse incentives often arise within the health system

Example: An 80-year-old woman suffers a stroke. In hospital, she makes a surprisingly rapid recovery, and after only 2 weeks she is sufficiently responsive to be able to discuss the next steps with her family. The patient herself, her husband and the attending physician are convinced that after a 4- to 6-week period of inpatient rehabilitation she will be able to return home. But her physician has great difficulty in obtaining confirmation that the rehabilitation stay will be covered by the health insurer. If the patient is admitted to a nursing home, the overall costs will be higher, but the proportion paid by the health insurer will be much lower.

The health system does not appear to be amenable to control, whatever aspect one considers – highly specialized medicine, basic care, costs, or personnel planning. Clearly, it has not been possible to date to develop a concept for controlling the highly complex health system which meets the technical, economic, social and political challenges and at the same time commands majority support.

This lack of amenability to control is attributable to an obvious deficiency of Switzerland's health system: the absence of a sound data base. What is lacking in particular are registries publishing the results of specialized, complex treatments. Such registries could also be used as tools for evaluative research and health services research. If this data were also correlated with the overall costs, a key requirement for improved control of the health system would be met.

Particularly problematic are the different financing schemes applicable for different types of care: outpatient medicine, home care (Spitex), acute inpatient care and residential long-term care are all financed by different combinations of payers. This may give rise to perverse incentives, running counter to the provision of needs-based care (cf. the example in the Box). This problem does not arise in countries (e.g. in Scandinavia) where uniform financing schemes have been adopted.

Financing systems varying from one type of service provider to another produce different – generally unintended – effects. Fee-for-service systems create incentives to do more than is necessary, so as to maximize profits. In a health system financed according to the solidarity principle, a kind of complicity may arise between patient and service provider: the former wishes to have as many services as possible, the latter as much income as possible. In a system financed by flat-rate payments (diagnosis-related groups/DRGs), there is a risk that

treatments may be omitted in order to generate higher profits. In an effort to mitigate such effects, mixed forms of these systems are used.

Across Switzerland, there is marked regional variation in the utilization of certain medical services, particularly in the case of elective procedures. Does this reflect different incidences of disease? Or is the variation attributable to non-medical or specific cultural factors? Studies indicate that a high density of physicians is associated with a higher rate of unnecessary investigations and treatments.

3. Possible measures

Achieving sustainable medicine will require more than good will on the part of individuals; nor is it possible to enforce sustainability by means of legislation. While a document such as this position paper cannot trigger an instant change of direction, it can draw attention to the issue and seek to raise awareness, stimulate political debate and give examples of measures which could be taken by specific actors.

Medicine has four fundamental values – non-maleficence, beneficence, respect for patient autonomy and (distributional) equity. In addition to these *ethical* aspects, sustainable medicine is guided by the principles of *evidence* and *economics*. This "triple-e" concept is a medical "translation" of and supplement to the criteria of efficacy, appropriateness and cost-effectiveness specified in the Health Insurance Act (KVG). Insofar as the ethics component of this concept represents a corrective to economics, it is more readily comprehensible and acceptable to health professionals than the KVG criteria.

In the formulation of possible measures, three medical system levels should be taken into account:

- treatment system (micro-perspective): interaction with the patient and the systemic context
- organizational system (meso-perspective): highly complex expert practice, based on division of tasks
- care system from the societal viewpoint (macro-perspective): establishment of conditions conducive to the development of individual actors and organizations

To achieve the goal of sustainable medicine, measures are required at each of these levels. At the micro- and meso-level, health personnel need to become active in their professional roles. Macro-level measures call for commitment not only on the part of policymakers, associations and scientists, etc., but also on the part of health professionals as citizens. Sustainable medicine needs to be supported by society in a spirit of solidarity.

As medicine is a highly complex system, there are no ready-made solutions and it will therefore be necessary to experiment and to accept the associated uncertainties.

3.1. *Research is crucial to sustainable medicine*

Using scientific findings for the benefit of patients is part of the ethos of the medical profession. Sustainable medicine is also dependent on research – especially health services and effectiveness research. In particular, there is a need for more and better-quality outcome data; accordingly, the establishment of registries should be promoted.

Health services research needs to be developed and expanded in Switzerland. This is the only way in which valid quality indicators can be developed for practice and new care models can be appropriately evaluated using the same parameters. Of growing importance in this regard is comparative effectiveness research, which compares the benefits and risks of alternative methods of prevention, diagnosis and treatment, or of managing and improving healthcare in practice.

Measures and actors

- The federal government commissions a National Research Programme on "Health

services research" in order to promote research expertise in this field over the medium and long term.

- The Swiss National Science Foundation also supports research projects in the fields of health services and comparative effectiveness research. To this end, experts in these areas should be appointed to the National Research Council, Division III (Biology and Medicine).
- Universities and universities of applied sciences make proposals on how health services research can be firmly established within academia.

3.2. Medical interventions should be wisely chosen

The approach which involves "doing everything if possible, immediately if possible" should be replaced by "doing enough, but not too much". For what are known as "wise choices" of this kind to be possible, three conditions need to be met.

- Independent guidelines define a baseline for quality in a broad sense. Therapeutic freedom is maintained – but with the proviso that deviation from guidelines needs to be justified.
- Physician and patient engage in shared decision-making; this also involves addressing any problems (age, comorbidity) and sharing uncertainties.
- Conflicts of interest are to be consistently disclosed, and a procedure for handling them is to be defined. This applies not only to the preparation of guidelines but also to the design of incentive systems.

Measures and actors

- Professional associations develop guidelines for the investigation and treatment of common conditions; if appropriate, international guidelines may be adopted. The guidelines specify what interventions are indicated and also what interventions are not indicated (and potentially dangerous).
- On the model of the American Board of Internal Medicine's "Choosing wisely" initiative, all professional associations draw up a list of 10 interventions which are clearly unnecessary and should therefore no longer be employed.
- The SAMS publishes guidelines on the management of conflicts of interest in the development of guidelines.

3.3. Based on future patient needs, it should be ensured that sufficient health professionals are trained, with the necessary knowledge and skills, and that they are appropriately deployed

In the near future, the number of elderly patients with chronic conditions will increase dramatically, leading to marked changes in the demands placed on the health system. Against this background, turf wars involving physicians, nursing staff and other health professionals now appear anachronistic. The central consideration should be what functions are needed to ensure high-quality patient care.

Numerous tasks which today may only be performed by clearly defined professionals could also be carried out by health professionals with different qualifications, acting independently (as is already the case in many other countries). In all areas and at all levels of medicine, an

appropriate grade/skill mix is to be promoted. This means that tasks are undertaken by people with the requisite knowledge and skills; in accordance with the principle of subsidiarity, it should generally be the person with the lowest possible level of training capable of performing the task proficiently.

Measures and actors

- Under the existing healthcare model, the number of training places and internships for health professionals should be increased; the necessary financing should be assured by the federal government and cantons.
- Faculties of Medicine and Health Departments of Universities of Applied Sciences adopt a coordinated approach to basic/postgraduate training and continuing education of health professionals (physicians, nursing staff, therapists).
- By establishing attractive employment conditions and salary structures, hospitals ensure that drop-out rates decrease for medical and nursing staff; in addition, they offer courses for professionals returning after a career break.
- The federal government should review and adjust regulations and tariffs so that they do not pose an obstacle to changes in roles and responsibilities.
- New models of interdisciplinary teamwork are to be promoted, enabling the various professions to be deployed in accordance with their core competencies. To this end, the federal government should take the initiative and seek to involve professional associations; at the same time, the various professional groups can test such new models locally on their own initiative.

3.4. Reimbursement should only be provided for preventive, diagnostic, therapeutic and rehabilitative services which meet the criteria of evidence, ethics and economics

Health Technology Assessment (HTA) is now regarded as the most suitable approach for comparing the costs and benefits of a medical intervention, while also considering ethical, legal and social aspects (e.g. equitable access to medical services). It would be useful to establish an institutionalized authority to critically assess expectations and benefits, promoting a realistic perspective; this authority should be independent.

The authority's responsibilities would include the following:

- defining transparent criteria for reimbursement of the costs of new and existing methods/procedures/drugs etc., especially for the rapidly growing "device" sector;
- defining the minimum additional benefits (balancing desired and adverse effects) to be demonstrated for new products and services, with the costs also being taken into consideration.

To ensure that the authority's decisions are acceptable, complete transparency is to be assured in all processes.

Measures and actors

- The federal government establishes the necessary legal framework for the introduction of HTA and also assures the financing of activities of this kind.
- As a core element, the Swiss Medical Board should contribute its expertise and skills to HTA activities; the number of reports issued per year (currently 3) needs to be

substantially increased; the necessary financing should be assured by broadening the range of funding bodies.

3.5. New models of care, management and financing are needed

In April 2012, a report on "New care models for basic medical care" was published by a working group of the Conference of Cantonal Directors of Public Health (GDK) and the Federal Office of Public Health (FOPH). The report investigates what form basic medical care could take in the future, given the emerging challenges (e.g. increase in chronic conditions, foreseeable shortages of physicians and nursing staff). Based on the current status of new care models in theory and practice, requirements are formulated for new models, proposals are made for improving the general environment, and roles are defined for the various actors involved in the process.

The conclusions of the working group's report can be broadly accepted; this also applies to the guiding principles for new care models outlined in the report.

For the development of new, sustainable care structures, the role to be played by competition among service providers needs to be investigated. While competition is often considered to be the best way of increasing the efficiency of the health system, a good deal of evidence suggests that it leads above all to primarily economically motivated competition among actors, distorts "wise choices" (cf. Section 3.2), impedes cooperation and jeopardizes solidarity.

The SAMS is convinced that well-developed basic care is essential to sustainable medicine; this in turn requires new care models. These should ensure high-quality care, which is oriented towards patient benefit and at the same time is cost-effective and close to the communities served.

The importance of prevention in this context is not to be underestimated. The 2011 OECD/WHO review of Switzerland's health system also recommends a stronger focus on prevention, and that the integration of prevention should be supported in new care models. Quaternary prevention (i.e. protecting patients at risk of overmedicalization), in particular, can be more readily assured under new care models than if patients are simultaneously treated by numerous health professionals acting independently of each other.

Thanks to well-defined and organized networks and patient pathways, new care models make it possible to improve collaboration between professional groups and to optimize the distribution of tasks and responsibilities. As well as improving the deployment of resources, this can also increase the attractiveness of individual professions. New care models require conditions of employment which are modern and attractive for current and aspiring health professionals.

If appropriately used, eHealth can support the effectiveness of new care models. For example, eHealth-based patient records can help to prevent "doctor shopping" and multiple investigations. In addition, it can enhance patient safety and reduce bureaucracy.

Measures and actors

- In the start-up phase, innovative new care models should receive financial support from the cantons (possibly in conjunction with other partners, such as service providers and their associations, federal and communal authorities). At the same time, the federal government should establish the legal framework required to strengthen basic care.

- There is a need for incentive systems which effectively prevent both under- and overprovision of care. This requires a financing system which is oriented towards quality, efficiency, equitable access and overall economic costs and also reflects the new distribution of roles and responsibilities.
- Parliament enacts the legal framework for a uniform financing scheme for outpatient, inpatient and long-term care, so as to eliminate the perverse incentives which exist today.
- Parliament creates the legal basis for quality- and cost-based control of the health system; the existing small-scale (i.e. cantonal-level) control is inappropriate.
- Physicians and hospitals implement eHealth; the federal and cantonal governments provide start-up financing to support this process.

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The Swiss Academies of Arts and Sciences' "Sustainable healthcare" project

Switzerland's health system is a focus of concern and debate. Controversy attaches to virtually every key aspect – planning, organization, management, financing and much else besides. There is, however, agreement on one point: reforms are urgently required. But proposed reforms seem to be unable to command majority support; almost all the reform efforts undertaken in recent years have been rejected or have failed to produce the desired results.

The urgent need for reforms is underlined by unmistakable signs of crisis: it is becoming increasingly difficult to ensure that the necessary personnel is available in the health sector, and this trend will certainly continue. The distribution of professional qualifications does not match requirements, and primary care is under threat. Rising costs are imposing an undue burden on the average Swiss citizen. At the same time, more and more is expected of the services provided by the health system.

In 2011, against this background, the Swiss Academies of Arts and Sciences launched the "Sustainable healthcare" project, which is intended to raise awareness of the issue among the medical profession and the population at large, and also to identify possible ways of tackling the problems. The project is led by a steering committee comprising not only representatives of the SAMS, SAHS and TA-SWISS but also external experts from the fields of medicine, nursing and ethics.

The project consists of four – partly overlapping – modules:

1. A study entitled "Methods of assessing the benefits and value of medical interventions, and their application in Switzerland and selected European countries". The report describes methods used to evaluate healthcare interventions and how they are applied in various countries; their advantages and disadvantages are also discussed.
2. The present SAMS position paper, which defines the responsibilities of health professionals in relation to sustainable medicine and explores the implications for day-to-day practice.
3. A "publifocus" consultation conducted by the Swiss Centre for Technology Assessment (TA-SWISS) on "Benefits and costs of medical treatments"; this module is designed to determine the views of a representative section of the population on health-economic methods of evaluating medical services (including the QALY concept).
4. A second study, entitled "Efficiency, utilization and financing of the Swiss health system". This study is to investigate the key question of whether and to what extent the current governance of the health system leads to misallocation of resources in individual areas of the health sector, and whether available resources could be deployed more efficiently across the entire health system.

The results of these modules are to be presented at a symposium to be held in Bern in early December 2012. At the same time, a roadmap will be published by the Swiss Academies of Arts and Sciences, indicating what measures should be taken by the actors concerned – and the appropriate time frame for the various measures.

This position paper was prepared by a working group comprising the following members: Professor Daniel Scheidegger, Basel (Chair); Dr Hermann Amstad, Basel; Professor Samia Hurst, Geneva; Angelika Lehmann, BNS, MAS, Basel; Dr Jürg Nadig, Bülach; lic. oec. publ. Anna Sax, MHA, Zurich; Dr Hansueli Schläpfer, Herisau; Professor Felix Sennhauser, Zurich; Professor Ulrich Sigwart, Geneva; Professor Martin Täuber, Bern; Professor Jean-Daniel Tissot, Lausanne; Christine Widmer, MNS, St Gallen; lic. iur. Barbara Züst, Winterthur.

The working group considered the issue in depth at a number of meetings. Following a review of the literature and detailed discussions, it produced an initial draft of the position paper. Selected experts were then invited to comment on this draft at a hearing (Professor Johannes Rüegg, St Gallen; Charles Kleiber, Lausanne; Dr Christoph Zenger, Bern; Professor Arnaud Perrier, Geneva; Professor Cornelia Oertle, Bern; Dr Fiona Fröhlich, Winterthur). On the basis of this feedback, a finalized version was prepared, which was discussed at a meeting of the SAMS Executive Board on 3 September 2012 and subsequently adopted.

Copies of this booklet (in French or German) can be obtained from the following address:

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The English version of the position paper is available online at: www.samw.ch

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