

Sustainable development of the health system

Position paper issued by the Swiss Academy
of Medical Sciences



 **SAMWASSM**

Schweizerische Akademie der Medizinischen Wissenschaften
Académie Suisse des Sciences Médicales
Accademia Svizzera delle Scienze Mediche
Swiss Academy of Medical Sciences

Information on the preparation of this position paper

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After a review of the literature and detailed discussions, the working group produced a first draft of the position paper. The following experts were invited to comment on the draft at a hearing: Professor Thomas Gächter, Chair of Constitutional, Administrative and Social Security Law, University of Zurich; Dr Alan Niederer, NZZ journalist, Zurich; Helena Zaugg, President of Swiss Nurses' Association (SBK-ASI), Bern; Professor Heike Bischoff-Ferrari, Chair of Geriatrics and Aging Research, University of Zurich; Dr Gérard Escher, EPFL, Lausanne; Michael Jordi, Head of Central Secretariat, Swiss Conference of Cantonal Ministers of Public Health (GDK), Bern. In addition, the following experts provided written comments: Dr Heinz Locher, health economist, Bern; Dr Piet van Spijk, President of Forum Medizin & Philosophie, Lucerne; Professor Arnaud Perrier, Division of General Internal Medicine, Geneva University Hospital (HUG); Charles Kleiber, former State Secretary for Education and Research, Lausanne; Philomena Colatrella, CEO of CSS Versicherung, Lucerne.

Based on this feedback, a finalised version was prepared; this was discussed at a meeting of the SAMS Executive Board on 17 September 2018 and subsequently approved.

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Executive summary

In recent years, numerous proposals have been put forward for reforming Switzerland's health system. However, most of these initiatives have met with scepticism or opposition. The actors concerned represent widely differing interests and are thus all pulling in different directions. The SAMS therefore feels it is appropriate to issue a position paper drawing attention to this deadlocked situation and proposing solutions. What is needed are reforms oriented towards common goals. Appropriate orientation for the health system is offered by the Triple Aim framework, the basic idea of which is to formulate goals from – *at the same time* – the perspectives of *public health, individual medicine* and *sustainability*.

Reforms have become all the more urgent as costs in the Swiss health system have risen continuously for many years. It is clear that not just the financial, but also the human and natural resources required by the health system in its current form are not available to an unlimited extent. The cost explosion is merely the symptom of a central contradiction undermining this system: the demand for health is unlimited, but resources are finite.

The more resources the state has to expend on healthcare, the less is available for other areas. If this leads to cutbacks, for example, in the educational, welfare or environmental sector, the health of the population may be adversely affected in the long term.

Recruitment of health personnel from abroad to meet staffing requirements is not only ethically problematic but also cannot be assured over the long term, since economic conditions in source countries may improve or the Swiss employment market may lose its attractiveness.

Based on these considerations, the position paper outlines and explains the eight measures regarded as appropriate and necessary for the sustainable development of the health system:

1. The health system actors are guided by the Triple Aim framework.
2. The cantons combine to form a small number of health regions.
3. Efforts to promote health literacy begin in childhood.
4. Switzerland knows how many health professionals are required and adjusts the number of training places accordingly.

5. The data required for quality assurance and health services research is available.
6. Interventions no longer needed are removed from the list of reimbursable services.
7. New reimbursement models reduce perverse incentives.
8. The federal government sets a ceiling on increases in health expenditures.

In addition, for medicine – as a central part of the health system – the Goals of Medicine defined by the Hastings Center in the 1990s remain valid:

- 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.

In line with the Goals of Medicine, this position paper also emphasises that the goal of medical interventions is not necessarily *restitutio ad integrum* (i.e. complete restoration of health), but recovery of the capacity to lead a life which is meaningful from the perspective of the individual concerned.

The position paper is addressed to health system actors, including patients: they are all invited to adopt a broader view, to accept that «business as usual» is not sustainable, and to take the necessary corrective measures.

A first step has already been taken: the Roadmap set out in the Annex was discussed, finalised and approved by numerous health system actors in January 2019.

1 Switzerland's health system in crisis

«If we go on like this, we'll crash the system into a wall» – in an interview with the *Swiss Medical Bulletin* (SÄZ), the SAMS President did not mince his words in discussing the crisis in the health system [1]. He argued that new approaches are required and that restraint needs to be exercised at various levels if the health system is to remain capable of functioning over the long term. What has gone wrong?

1.1 High consumption of financial, human and natural resources

Over the last 100 years, life expectancy in Switzerland has risen steadily and the health of the population has improved considerably. This success is often attributed primarily to medical progress. What is often overlooked are the equally important contributions to these positive developments made by improvements in hygiene, working conditions, nutrition and education. In other words, the health of the population does not depend solely on the health system¹.

The health system now consumes an increasingly large share of available financial, human and natural resources. Although the concept of sustainability originated in ecology and initially referred to the consumption of natural resources, it can also be applied to the consumption of other resources. If financial and human resources are depleted, the development and hence the adaptability of the health system will also be restricted.

For many years, costs in the Swiss health system have risen continuously and at an above average rate compared to costs in other sectors; health costs as a proportion of GDP rose from 7.5% in 1990 to 12.2% in 2016 [3]. What is problematic is not so much this increase in itself as the following consequences:

- Health insurance premiums have now reached a level which for many people, and families in particular, is financially intolerable; this is partly due to the fact that premium subsidies have been frozen or even reduced by many cantons. In addition, there is already evidence that people are avoiding necessary medical consultations for financial reasons [4].

1 Here, the health system is understood as the «totality of facilities and measures for health promotion and disease prevention, diagnosis and treatment of disorders, illness and injury, and subsequent rehabilitation» [2]. As well as the state, which exercises an influence for example through legislation and subsidies, health insurers (as payers) and health professionals (as service providers) are part of the health system.

- The cantons are faced not only with the growing burden of premium subsidies but also with rising hospital costs. Additional funding directed to the health system leads to shortfalls in other areas (e.g. education, welfare or infrastructure).

An end to this trend is not yet in sight; all forecasts assume that the rise in health costs will continue to outstrip growth in GDP – with diminishing marginal utility: every additional Swiss franc invested will yield sometimes only minimal additional benefits.

Rising costs seem to be like a law of nature: nobody will admit to being responsible for them. Not surprisingly, international studies have repeatedly highlighted inadequacies in the governance of Switzerland's health system [5].

Additional – in some cases pointless – interventions are driven by exaggerated claims and false hopes spread by suppliers of health services (increasingly outside the medical sector) and the media, and readily embraced by patients.

Another factor contributing to increasing demands on the health system is the poor health literacy of broad sections of the population [6]. Many people are no longer able to recognise trivial conditions as such and to treat them themselves. There is also a tendency for social problems (e.g. workplace stress) to be medicalised.

By comparison with other OECD countries, Switzerland has a relatively high density of health professionals [5]; however, this is based to a significant extent on international recruitment of personnel. But despite the considerable influx from abroad, by no means all vacancies in the various sectors of the health system can now be filled. It is also the case that Switzerland – both in relation to the number of health professionals currently working here (especially physicians and nurses) and compared to other countries – does not train sufficient numbers of new staff [7,8]. It is ethically problematic if an affluent country deprives other countries of expensively trained medical specialists who are urgently required in their countries of origin [9].

The health system employs 6.7% of the population; together with around 280 hospitals and 1500 care homes, this yields a volume of activities with a significant ecological footprint – e.g. in terms of energy and water consumption, use of disposable items, or environmental pollution.

It is clear that the financial and human resources required by the health system in its current form are not available to an unlimited extent:

- The more resources the state has to expend on healthcare, the less is available for other areas. If this leads to cutbacks, for example, in the educational, welfare or environmental sector, the health of the population may be adversely affected in the long term.

- Recruitment of health personnel from abroad to meet staffing requirements is not only ethically problematic but also cannot be assured over the long term, since economic conditions in source countries may improve or the Swiss employment market may lose its attractiveness.

1.2 Opposition to reforms

The SAMS is seriously concerned about these developments. In 2012, it issued a position paper on «Sustainable medicine» [10]; this was inspired by an essay on the same topic published in 2004 by Daniel Callahan [11], who had previously contributed to the Hastings Center report on «The Goals of Medicine» [12]. 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». Clearly, 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».

It soon became apparent, however, that not just medicine, but the health system as a whole (cf. the definition in Footnote 1) is in crisis. In 2014, the SAMS responded by issuing a roadmap for a sustainable health system for Switzerland [13]. In the months following the publication of this document, meetings were held with those health and education system actors who were expected to take specific measures under the roadmap. The final evaluation carried out in 2017 indicated that, while various measures have been implemented, the goal of a sustainable health system is still far from being achieved.

The warning voices have now grown louder. In a study published in early 2018 [14], *Avenir Suisse* warns of an imminent collapse of the system: distorted, non-transparent pricing, cross-subsidisation and uncoordinated, often contradictory goals defined by the various actors (federal government, cantons, health insurers, hospitals, etc.) are creating perverse incentives, thus corrupting the system. To ensure that the health system can continue to function in the future, the requisite measures need to be taken today.

While there have been numerous reform initiatives (including the Federal Council's «Health2020» strategy [15] and an expert group's report on «Cost containment measures to relieve pressure on the compulsory health insurance scheme» [16]), these have mostly met with scepticism or opposition.

The SAMS therefore once again feels it is appropriate to issue a position paper drawing attention to this perilous situation and proposing solutions. According to Niklas Luhmann [17], whose notable theory has been applied to various areas of society, systems – such as the health system – are autopoietic and self-referential, which means that they cannot be reformed by another (e.g. political or economic) system. Whether or not this theory is valid in an absolute sense, it is clear that, over the past ten years, interventions primarily based on a political and economic logic have not been successful. It thus seems reasonable to focus on the internal logic of medicine, defined not only by specific expertise but also by particular values and a particular professional ethos.

That is what this position paper seeks to do, showing on the basis of the inherent goals of medicine what a sustainable health system would look like. It is addressed to all health system actors, including patients: they are all invited to adopt a broader view, to accept that «business as usual» is not sustainable, and to take the necessary corrective measures.

2 Orientation required for sustainable development of the health system

2.1 Health system «flying blind»

A key weakness of the Swiss health system is highlighted by the above-mentioned OECD/WHO report [5]: «The paucity of information on health inequities and quality of care makes it difficult to assess whether Switzerland receives value for money for its major financial investment in health care.» It is not known, for example, how frequently certain (combinations of) diseases occur in Switzerland, whether they are recognised and treated in a timely manner, and whether treatment is well coordinated so as to avoid hazardous duplication and unnecessary costs.

This situation is all the more worrying as the health system is currently facing major challenges. These include not just demographic changes; the consequences of digitalisation, big data and personalised medicine are not yet foreseeable – they could be positive or negative. In addition, the fact that big IT companies (e.g. Google and Apple) or the Federal Institutes of Technology (ETH Zurich and EPFL) are entering the health sector has disruptive potential [18].

The health system should not, however, be guided solely by changes in demand or current trends, especially as it is not clear what costs these will entail. What is required is a framework, or goals, to guide the long-term development of the health system.

Until around 50 years ago, the unspoken goals of medicine («cure and, where no cure is possible, alleviate») were so self-evident that no distinction was made between the goals of medicine and those of the health system.

The need for more precise definition of the goals of medicine arose when, firstly, the discipline became increasingly fragmented and, secondly, medical progress gave rise to excesses such as so-called heroic measures. In every situation – including end-of-life care – medicine employed all the means at its disposal; the goal was to prolong life at any cost. The subsequent reaction against this approach is exemplified by the «Goals of Medicine» formulated by the Hastings Center in the 1990s [12]:

- 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 also contributed to this debate, launching the «Re-orientation of medicine» project in 1999 [19]. In its position paper on «Sustainable medicine» published in 2012 [10], it underlined the importance of the Goals of Medicine.

The crisis in medicine has since become a health system crisis. At the same time, the health system in Switzerland appears to lack orientation. Although the Federal Council's «Health2020» strategy was published in 2013 [15], it was not enthusiastically received by the numerous health system actors. A similar fate was suffered by an expert group's report, published in 2017, which outlined a variety of interesting measures to ease the burden on the compulsory health insurance scheme [16]. The actors concerned represent widely differing interests and are thus all pulling in different directions. Almost all have been unanimous only in their rejection of the expert report.

What is urgently needed are reforms oriented towards common goals (mission-oriented innovation), similar to the Sustainable Development Goals (SDG) being pursued at the international level [20]. Appropriate orientation for the health system is offered by the Triple Aim framework developed in 2007 by the Institute for Healthcare Improvement (IHI) [21].

2.2 Triple Aim framework as a compass

The basic idea of the Triple Aim framework is to formulate goals for the health system from – at the same time – the perspectives of public health, individual medicine and sustainability [22]. The three dimensions are defined as follows:

1. improving the health of populations;
2. improving the patient experience of care (including quality and satisfaction); and
3. reducing the per capita cost of health care.

The overall goal can only be achieved if each of the three dimensions is fulfilled. This means that the following critical questions are to be asked with regard to a medical intervention or institution: does it respond to a relevant health problem among the population (or does it involve dispensable, supply-driven «luxury offerings»)? Does it promote the patient's welfare? Does it ultimately help to reduce health expenditures? For example, robot-assisted surgery may increase patient satisfaction, but evidence of improved quality has yet to be provided; likewise, this type of procedure neither improves the health of the population nor does it reduce health costs.

The criterion of cost reduction is to be understood in the context of the US system, where health expenditures have now reached 18% of GDP, without universal coverage being attained. For Switzerland, this aim could conceivably be adapted in the direction of containing rising costs. On the other hand, health expenditures in Switzerland now amount to at least 12% of GDP, with a high share of private expenditure; according to a recent report, 20% of the population avoid medical consultations for financial reasons [4]. At the same time, political efforts to contain costs are being intensified [16].

Against this background, the Triple Aim framework is also relevant for Switzerland. The advantage of this framework is its explicit involvement of the population level; attention is thus focused not only on the quality of individual care, but also on questions of priority-setting and distribution. It is foreseeable that the Swiss health system will have to address these questions sooner or later.

3 The three aims of a sustainable health system

Reference to the Triple Aim framework was previously made in the SAMS position paper on medicine and economics [23], as this framework seeks to integrate medical and economic goals. The overall goal cannot be achieved if one of the dimensions is omitted. This does not mean that there is always universal agreement as to how precisely the overall goal is to be defined and achieved. This requires a continuous, constructive discussion, both at the level of the health system as a whole, and of the individual health institutions that contribute to realising the goal. Economic thinking in medicine is thus desirable in the interests of a sustainable health system, but it must not pose a threat to high-quality medicine.

It can be helpful, despite differing positions on individual questions, to invoke the Triple Aim framework as a shared vision, in both a positive and a negative sense: What is definitely required in individual patient care and in the provision of care for the population? Or, expressed in negative terms: What can we not afford to lose in healthcare?

3.1 Aim 1: Good health status of the population

Public health – in contrast to individual medicine – is concerned with the health, not of the individual patient, but of the population as a whole. Originally it focused on the control of widespread infectious diseases; gradually, there developed a more comprehensive understanding of how diseases arise and spread within populations, and of how they can be combatted.

Most countries accept some form of responsibility for ensuring the health of their citizens. The health status of a population can be described with the aid of indicators (average life expectancy, infant and maternal mortality, etc.). In general, there is a correlation between the health of the population and the country's economic prosperity, though this is not always the case: in the US, for example – the country with the highest per capita health expenditures – infant and maternal mortality is higher and life expectancy is lower than in many other countries with significantly lower health spending.

Not every intervention indicated from the perspective of individual medicine makes sense from a public health perspective. For example, indiscriminate screening may detect disease at an early stage in individual cases but lead overall to numerous false-positive findings and unnecessary additional investigations, thus ultimately doing more harm than good. Conversely, public health measures (e.g. smoking and alcohol prevention, road and occupational safety) can substantially reduce the incidence of disease and mortality.

More specifically, this aim involves the following subgoals:

Healthcare is based on the solidarity principle

All patients – i.e. also those from socially disadvantaged groups or with rare diseases – are entitled to access essential services on the basis of individual needs. For expensive treatments, it will remain necessary for the population as a whole to bear the costs of treatment via compulsory basic insurance, with the costs being distributed in accordance with the solidarity principle. Beyond that, supplementary insurance covers «nice to have» needs.

The population has a high level of health literacy

«Health literacy» encompasses the ability, knowledge and motivation of the population, population groups, or individuals to obtain, understand, assess and use health information. This enables them to form their own opinions and to make and implement decisions in their daily lives concerning health promotion, disease prevention and treatment. In addition, they are aware of the financial consequences of their decisions.

3.2 Aim 2: High-quality healthcare for each individual patient

The individual-medicine perspective has of course always been at the centre of the health system. This perspective is also adopted by the Hastings Center's Goals of Medicine [12]: all patients are to be sure that their pain and suffering will be relieved, that they will be treated and cared for if they are ill and receive care if they cannot be cured, and that a peaceful death is to be pursued. In addition, however, they are to be able to rely on obtaining access to healthcare and having their concerns taken seriously. For medicine – as one component of the health system – the Goals of Medicine will continue to serve as important guiding principles.

More specifically, the second aim of the Triple Aim framework involves the following subgoals:

The patient's concerns are placed at the centre of healthcare

Health professionals have a responsibility, together with patients, to define the best approach to pursue in each individual case. The goal of medical interventions is not necessarily *restitutio ad integrum* (i.e. complete restoration of health), but recovery of the capacity to lead a life which is meaningful from the perspective of the individual concerned. Here, guidelines can be helpful, but they must not be applied inflexibly. Justified deviations from guidelines must always be possible without the patient, the attending physician or the health institution suffering any disadvantages. In particular, the option of withholding medical interventions should be considered more frequently in indication boards or in physician-patient interactions.

People who are ill generally wish to be cared for in a trusting environment. Trust is created primarily through direct person-to-person interactions. In complex situations (particularly in hopeless end-of-life situations or in the last years of life), informed decision-making – with responsibility being assumed by both parties – is only possible if sufficient time is available for human interaction and if the health professionals have the requisite social competencies.

Healthcare is evidence-based

Healthcare is of high quality if (as well as being guided by patients' needs and what is possible in a given context) it is evidence-based – i.e. if the effectiveness and appropriateness of the interventions employed has been demonstrated. Health professionals should have the necessary skills to correctly evaluate the evidence and establish the indication for an intervention so as to achieve the optimal treatment outcome for patients with the resources available; likewise, the relevant data must be available to allow the evidence to be continually reviewed by means of health services research. Guidelines should increasingly also recommend the avoidance of an intervention if it is harmful, ineffective or not sufficiently effective.

In addition, provision is to be made for the publication of all results of clinical studies, including those with negative findings (if not in journals, then at least in open access repositories); this is the only way of preventing publication bias and thus an unrealistic and unduly positive representation of the effectiveness of new diagnostic or therapeutic methods.

3.3 Aim 3: Responsible management of limited financial, human and natural resources

The main problem with a solidarity-funded health system (i.e. the area covered by compulsory health insurance) is that not enough people recognise that resources are limited and act accordingly; in addition, the operation of economic mechanisms is prevented by the lack of cost and price transparency, the asymmetry of knowledge, the fact that patients are protected against treatment costs by the existence of health insurers, and a heavily regulated market. Whether such mechanisms could in fact enhance patient welfare – let alone promote a sustainable health system – is, moreover, a matter of dispute. Whatever the case may be, in the current state of the health system, all parties can pursue their own interests irrespective of the consequences for society. A system of this kind cannot be sustainable.

More specifically, the third aim involves the following subgoals:

Public financing of the health system does not compromise other public responsibilities

The cantons currently bear a substantial proportion of hospital costs. At the same time, spending on premium subsidies is steadily increasing as a result of rising health insurance premiums. With fixed cantonal budgets, growing health costs automatically necessitate savings in other areas (e.g. education, welfare), which can have adverse impacts on the health of the population. Accordingly, expenditure on the health system must be limited as a proportion of total costs.

Compulsory health insurance costs in the health system are transparent and appropriately distributed among stakeholders

Cost and price transparency in relation to compulsory health insurance is a prerequisite for the operation of economic mechanisms; in addition, it is necessary if the costs of the services provided are to be monitored. It ensures that actors have clear information on the financial consequences of their behaviour.

4 The road to a sustainable health system

Below, the SAMS outlines those measures which, in its view, would contribute to sustainable development of the health system. Some of these were already included in the SAMS position paper on «Sustainable medicine» [10], but they remain relevant today. Not surprisingly, several of the measures were also proposed in the above-mentioned expert group's report on «Cost containment measures to relieve pressure on the compulsory health insurance scheme» [16]. The overlap is, on the one hand, coincidental – the two bodies worked independently of each other – and, on the other hand, no accident: from an impartial viewpoint, most of the measures suggest themselves almost inevitably.

In a Roadmap (see Annex), the SAMS has set out the various steps and actors involved in the implementation of the individual measures.

4.1 The health system actors are guided by the Triple Aim framework

The Triple Aim framework is suitable for providing orientation at each level of the health system – local (hospitals, health centres), regional (health regions) and national. The actors responsible define for their particular area, in dialogue with each other, how they intend to flesh out and implement the Triple Aim framework, drawing on the experience already gained elsewhere [22]. For health professionals, the Goals of Medicine [12] additionally serve as important guiding principles in their daily work with patients.

4.2 The cantons combine to form a small number of health regions

The Swiss health system has a governance problem: the existing patchwork structure makes it difficult or impossible to control the system in a reasonable manner. The country's federalist tradition makes a centralist solution unacceptable. The solution envisaged by the SAMS involves the creation of a few health regions. Within these regions, the medical services offered could be controlled much more effectively than is possible in the cantons, which differ widely from each other. Ideally, each health region covers a population of around 1.5 million and is home to a university hospital.

4.3 Efforts to promote health literacy begin in childhood

Health literacy is not promoted primarily through or within the health system. Although health professionals can provide valuable assistance to patients in making decisions, health literacy should be acquired before entering the health system. The education system and low threshold prevention and health promotion programmes must therefore already address children via suitable instruments. Health literacy is generally independent of the educational level attained. Accordingly, children from educationally disadvantaged families will benefit in particular from the expansion of educational services.

Knowledge is only one aspect of health literacy. The ability to make an informed and voluntary health decision depends not only on whether one understands the available information but also on material conditions and on the accessibility of the various options.

On the one hand, digitalisation and artificial intelligence offer patients new tools for obtaining information on preventive measures and on their own health problems. On the other hand, it is becoming increasingly difficult, both for laypeople and for experts, to extract – from the large volume of available information of widely varying quality – evidence-based information which is relevant for the individual patient and context, and to interpret this correctly or use it to select appropriate measures. Health professionals will therefore increasingly be required to act as advisers.

4.4 Switzerland knows how many health professionals are required and adjusts the number of training places accordingly

In Switzerland, despite the recruitment of large numbers of health professionals from abroad, it remains difficult to fill all vacancies in the health sector. Should there be a sudden improvement in employment conditions in the countries of origin, staff shortages could increase rapidly and significantly. There is a need to rethink and redefine responsibilities and competencies for the medical treatment of patients, also with regard to new care structures such as health centres or new functions such as navigation (cf. Sections 5.2 and 5.4). As a result, the profiles of individual health professions will be redefined, and this needs to be taken into account in the relevant basic and specialist training. In addition,

there is a need to reverse the trend whereby hospital physicians and nurses are increasingly burdened with administrative tasks and the share of patient-contact activities continues to decline [24].

Switzerland currently trains less than half of the health professionals required to meet future demand [25]. Individual federal measures to support training places in medicine have already led to an expansion of student numbers, but this will not be sufficient to meet projected demand. In addition, it must be ensured that the number of specialists trained is in line with the requirements of the population rather than those of the training institutions [8].

Solutions are also required to support training places for nurses, as well as flexible job opportunities for women returning to work. It also needs to be defined what level of skills is required to provide an adequate response to the rising demand for care, with an increase in complex nursing tasks and complex conditions. Various studies have shown an association between nurses' educational qualifications and patient safety in hospitals [26].

In addition, healthcare models involving the integration of advanced nursing practice show improved health outcomes for patients, for populations and with regard to health-economic parameters. It would therefore be appropriate to promote the training of advanced practice nurses (APNs), to facilitate their establishment within the Swiss health system through amendments to legislation, and thus to enhance the attractiveness of this profession.

4.5 The data required for quality assurance and health services research is available

The health system requires «actionable data» [27]. Relevant patient data should be systematically collected and made available for quality assurance and health services research. Here, electronic patient records are of crucial importance. The principle of voluntariness for both parties – i.e. for outpatient service providers and for patients – which was understandable during the introductory period, should be abolished as soon as possible. Those who wish to benefit from solidarity-funded health insurance – both as patients and as physicians – should also be obliged to make available the data generated. Naturally, data protection and security are an essential prerequisite for measures of this kind.

At the same time, it should be ensured that the collection of data which is not subsequently analysed is stopped.

4.6 Interventions no longer needed are removed from the list of reimbursable services

New interventions which are more effective, appropriate or cost-effective than those generally employed to date are constantly being added to the list of reimbursable services. However, very rarely is one of the older interventions removed from this list. Instead, while new ones are added, treatments which are outdated on the basis of scientific evidence continue to be used.

Health technology assessment (HTA) is a suitable approach whereby medical interventions can be evaluated according to the criteria of efficacy, appropriateness and cost-effectiveness and, if necessary, added to the negative list. The activities of the federal authorities and of the Swiss Medical Board in this area should be intensified.

«Smarter medicine» or «Choosing wisely» lists offer an additional way of drawing the attention of service providers to obsolete interventions. These should be used and further developed by all health professionals.

There is also a need to establish sources of funding for research projects which respect the goals, tasks and limits of medicine and potentially have a high public health impact, but which are not attractive for industry.

4.7 New reimbursement models reduce perverse incentives

In principle, the Health Insurance Act makes provision for ways of reviewing or ensuring the appropriate use of medical interventions. However, all parties appear to lack motivation to undertake such efforts.

There is a need for incentive systems which prevent both under- and overprovision of care. This requires a reimbursement system which is guided by the criteria of quality, efficiency, equitable distribution and overall economic costs, and which reflects the new assignment of roles and responsibilities.

Under the planned «experimentation article» in the Health Insurance Act, it will be possible for new, innovative models which have already proved effective abroad to be tested initially on a temporary, regionally limited basis – for example, value-based insurance: here, insurers are able to deny reimbursement for treatments demonstrated to be of little or no value, or to reimburse the costs of treatment only if it has led to an improvement in health (pay for performance). If patients insist on receiving such treatments, they are required to pay more or the entire costs themselves. This necessitates a treatment classification system and improved dialogue between patient and physician, in which the patient is objectively informed about the benefits of a treatment. Classification systems already exist, for example, in the US (Choosing Wisely) and the UK (NICE). Acceptable solutions will presumably only be achievable on a voluntary (opt-in) basis, whereby the patient selects an option under which preference is given to Choosing Wisely medical services and the price is adjusted accordingly.

The introduction of the DRG (diagnosis-related groups), or fixed rate per case, system does not appear to have led to a reduction in cost growth; this is because the base rate was constantly adjusted, so that the status quo was reflected in a cost-neutral manner. With regard to this measure, the proposals formulated in the Avenir Suisse report [14] are also worthy of consideration:

- Greater transparency in granting of subsidies: the allocation procedure with regard to services of general economic interest must be made more transparent and equitable, either via calls for tenders or explicit approval by the cantonal parliament concerned.
- Active involvement of patients: patients – i.e. the end users – should have a say.
- Elimination of cantonal hospital lists: cantonal hospital lists should be replaced by quality standards valid throughout Switzerland.

4.8 The federal government sets a ceiling on increases in health expenditures

The first and most important measure recommended in the expert group's report is «Setting a binding target for compulsory health insurance cost growth» [15]. The SAMS assumes that such a measure could be avoided if the Triple Aim framework is consistently implemented. However, if the Triple Aim framework is not implemented, then a ceiling on compulsory health insurance costs (or

growth in health costs) – which has already been introduced in other countries – is the means of last resort for addressing the multiple challenges: other areas in cantonal budgets are protected; all parties have an interest in transparency to ensure appropriate apportionment of costs; there is less (or no) need for fine-tuning of Tarmed, DRG, deductibles, etc. Many perverse incentives have arisen precisely as a result of these partial measures, which were easily circumvented because the actors were not subject to the discipline of a fixed ceiling.

The SAMS is well aware that the introduction of a cost ceiling creates anxieties and is challenging. While the introduction of a cost ceiling is a measure on the macro level, it produces effects on the micro level, specifically that of service providers. At the same time, the SAMS believes that this external pressure may possibly be required to set a reform process in motion.

Naturally, prior to the introduction of a cost ceiling, rules are to be established for the allocation and prioritisation of resources, with the involvement of all stakeholders. In its report, the expert group underlined the importance of democratically legitimated discourse and a phased approach, in the course of which the contracting parties should be given genuine opportunities to establish rules themselves. In addition, the goals in question should not be annual goals, but goals for periods of several years. As an urgent measure, data availability must be improved, especially in the outpatient sector.

It is also to be ensured that undesired consequences (e.g. increased volumes; decreases in necessary but unprofitable interventions and increases in unnecessary but profitable interventions) are rapidly identified and corrected. Against this background, health services research is of vital importance, and a legal basis should be created for establishing and supporting such research. In addition, research projects should be encouraged which aim to achieve the same health goals with lower costs.

5 The health system of the future

In a workshop, the working group of the SAMS explored in detail what a sustainable health system would look like. The description below indicates where the working group sees the greatest need for action compared to the situation today – namely, in the following areas:

- Medical action is guided, at the overarching level, by the Triple Aim framework and, at the individual level, by patient preferences and experiences.
- The health system is divided into a few health regions.
- Local healthcare is provided at health centres; if required, support is available for patients through navigation models.
- The necessary data is available in good time.

5.1 Environment/context

The education system, the welfare system, workplaces, an extensive and intact infrastructure, and environmental protection all help to ensure that people are healthy and remain so for as long as possible. Prevention and health promotion are accorded high priority and also contribute to the extension of healthy lifespan.

The health system is utilised if a person is ill. It is based on the solidarity principle and enables all patients to access essential services on the basis of individual need. In addition, it is guided by goals – on the one hand, overarching goals (the Triple Aim framework) and, on the other, the goals of the individual patient.

Effective health services research provides criteria for appropriate healthcare, identifies perverse incentives and conflicts of interest, and outlines measures to enhance quality and efficiency. The costs of health services are transparently reported. Not only the effectiveness but also the cost/benefit ratio of new therapeutic approaches and health services must be demonstrated. When new interventions are included in the list of reimbursable items, interventions which are no longer needed are removed at the same time.

5.2 Structures

Structures are to be aligned with demographic developments and with migration as a general phenomenon of the future. The population has access both to local, low-threshold primary (outpatient) care and conveniently located inpatient care and also to high-level medical services at university centres, and all sections of the population are appropriately informed about the various options. The subsidiarity principle is applicable:

- Where *self-help* is possible, it is employed.
- Common health problems treatable on an outpatient basis are treated at *health centres*; these are responsible for «everyday outpatient medicine». A health centre generally offers the following range of services: general internal medicine, gynaecology, paediatrics, psychiatry; pharmacy; physiotherapy; outpatient rehabilitation; parent counselling; Spitex (home care); social services, Pro Senectute and transport services. A health centre is responsible for approx. 20,000 patients.
- *Public and private regional hospitals* cover «everyday inpatient medicine»; their catchment area comprises approx. 300,000 patients.
- *University hospitals* are concerned, firstly, with «non-everyday medicine» and also offer «state-of-the-art medicine». Each health region is home to a university hospital; it is ensured that all inhabitants are addressed in the language of their canton of residence.

Old people's and care homes also have an important role to play. They are part of the system, intervening in the social sphere: to enable people to live as long as possible outside the health system, the necessary care and accommodation facilities must be in place for the ageing population. This is one of the goals of the World Health Organization's Global Strategy and Action Plan on Ageing and Health [28], which has been adopted by Switzerland (see www.ageingsociety.ch). Based on a functional conception of health, the Strategy sets out four fields of action: 1) gaining a more complete understanding of healthy ageing, 2) aligning health systems to the needs of older populations, 3) developing long-term care systems, and 4) creating age-friendly environments. For a sustainable health system, all four areas are important. What is crucial is the insight that,

in older people, the goal cannot be the complete restoration of physical health (*restitutio ad integrum*); rather, quality of life is to be stabilised in interaction with the environment. Functional impairments can be compensated for by the use of aids (including digital tools), but especially also via appropriate design of living environments and neighbourhoods. Thus, the onus here is not only on the health system but also on district and urban planning.

The Strategy also emphasises the fact that ageing is not merely a biological process, but essentially a social one: we also age if our environment changes rapidly and we can no longer recognise, understand and cope with it. Accordingly, the environment must be adapted to the needs of an ageing population. Facilities should be available covering a broad spectrum in accordance with individual needs, extending seamlessly from older people's housing (for independent or assisted living) to care institutions which can be used on a temporary or full-time basis.

5.3 Processes

Access to the health system is low-threshold: this includes not only advice by telephone and health apps but also local healthcare models for vulnerable patient groups – minor problems can often be satisfactorily dealt with in this way. If necessary, patients can be referred to a health centre or – in more serious cases – a regional hospital. Services are delivered within an integrated care framework. Emergency care is provided by staff from health centres in regional hospitals.

Decisions on all medical interventions (diagnosis, treatment, rehabilitation) are based on the patient's needs and are also evidence-based. It is the task of the health professional responsible, together with the patient seeking help, to determine the patient's needs and goals via a biopsychosocial assessment. At the same time, the overarching goals provide the framework within which the patient can and should expect to receive support.

This yields an individualised conception of health, which does not arise solely from biological factors but needs to be repeatedly redefined in a dialogue between health professionals and the patient. Of particular importance, accordingly, are the patient's capacity for self-reflection, the health professionals' communication skills, appropriate remuneration of the time required for repeated discussions, and the continuity of the relationships based on trust between the patient and the care providers.

Depending on the goals agreed, different treatment paths will be required («no treatment» may also be appropriate in certain situations), as well as graduated levels of care ranging from outpatient to highly specialised medicine. Service providers are always obliged to offer a patient alternatives to the proposed treatment; these are noted in the patient's records. In addition, the option of seeking a second opinion should be available. At the end of life, a patient should – if desired and where possible – be able to die at home, or alternatively in a setting ensuring dignity within the health system.

Through interprofessional collaboration, the quality of care is enhanced and resources are used more efficiently. In complex cases, appropriate treatment is discussed and decided by an interprofessional «indication board» – along the lines of the «tumour board». However, indication boards of this kind will only produce meaningful results if at least one member thereof is sufficiently familiar with the health concerns of the patient under discussion.

Patient data is systematically collected and made available (subject to rigorous data protection and security standards) both for treatment and for research. All information and decisions are retrievable in one place (electronic patient records). This means, firstly, that patient experiences and preferences can be taken into account in decision-making (e.g. dying at home); secondly, it introduces transparency into the health system. A feedback loop thus arises: patients' needs and concerns are reflected back to society.

Both the overarching and the individual goals should be borne in mind throughout the treatment process. Patients and service providers alike need to be aware that «more» does not always mean «better». In the management of patients with chronic illnesses or multimorbidity, it should be ensured that each condition is not addressed in isolation by the specialist concerned, so that the overarching goal is not lost sight of – namely, helping such patients to regain their equilibrium, to cope with the consequences of their illness in their daily lives, and thus ultimately to be able to do what they feel to be important.

5.4 Service providers

Service provision is assured by well-trained, socially competent health professionals who have sufficient time to interact with the patients in their care, who have an interprofessional conception of their role, and who ensure that the resources available for healthcare are appropriately used.

To enable the Swiss population to find their way around the health system, so-called navigators control access to health services, including, for example, screening tests for healthy individuals or supervision of the entire treatment path for patients. These navigators are familiar with the health system, and they have the closest relationship to, and can discuss diagnoses and treatment options with the patient. Even if the traditional GP serves as a model, the navigator's role is not necessarily assigned to a physician. Depending on the area of responsibility, lay health workers or social workers may take on navigation functions in relation to health promotion services. Positive results have been achieved with the deployment of appropriately trained (advanced practice or specialised) nurses as navigators for people with chronic diseases [29].

Among the new interprofessional and efficient care models, those in particular deploying advanced practice nurses (APNs) in acute, primary and long-term care deserve to become established. Care models of this kind support the economic sustainability of health systems by reducing hospital and emergency visits, shortening hospital stays and enabling access to less costly and more appropriate health services. In addition to cost-savings, it has been shown that provision of care by APNs leads to better patient health and higher satisfaction with care, especially in particularly vulnerable patient groups [30].

5.5 Health insurers

Under the «experimentation article» in the Health Insurance Act, it is possible for new, innovative models which have already proved effective abroad to be tested initially on a temporary, regionally limited basis.

5.6 Patients and the insured

The population has a high level of health literacy – i.e. healthy individuals and patients are capable of negotiating the health system and participating in decision-making, and they are aware of the financial consequences of their decisions. Patient autonomy is essentially a right of refusal rather than a claim right: having been appropriately informed, patients can decide autonomously whether or not to undergo a proposed treatment. They are not, however, entitled to have investigations or therapeutic measures carried out if these are not medically indicated.

People who are healthy, as well as patients, have information and options available for improving their own health. Educational measures empower them to select – from the information increasingly available – that which is relevant, to interpret it correctly and to make optimal use of it. Considered and moderate use – for appropriate purposes – should be made of the potential for large-scale data analysis and artificial intelligence to improve medical services. Artificial intelligence is no substitute for self-chosen life plans and autonomous decisions; it does, however, have the potential to support informed decision making by providing relevant information.

Premium payers, patients and their relatives have an organisation which is of systemic relevance – similar to those in the environmental sector. This organisation effectively represents its members' interests and, being entitled to launch referendums or initiatives, is a force to be reckoned with in health policy.

5.7 Incentive system

Perverse financial incentives and excessive prices are reduced to a minimum. Inpatient and outpatient services are financed according to the same rules. Uniform financing leads to a reduction in oversupply.

Outpatient care is provided using integrated care. Numerous studies show (also for Switzerland) that such models are highly cost effective compared to standard insurance offering free choice of physician.

Each medical service has a price tag; this permits cost transparency and appropriate decisions. Data on service quality is also processed and made available in a comprehensible form.

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Annex: Roadmap

The position paper outlines and explains eight general measures which the SAMS regards as appropriate and necessary for the sustainable development of the Swiss health system. The following roadmap offers suggestions concerning the various steps and actors involved in the implementation of each of these measures. Here, the following points should be borne in mind:

- As the number of individual measures required is quite substantial, the roadmap highlights those, in particular, whose implementation can be directly or indirectly influenced by the SAMS. This does not mean that other measures are of less importance.
- All health system actors are invited to define for themselves and to implement those measures which are relevant for them and which support the implementation of the Triple Aim framework.
- Given the dynamics of the health system, the time frame set is deliberately short.
- Accompanying research should be conducted for all measures (in the interests of a «Learning Health System»); otherwise it is not possible to demonstrate whether and how the measure in question is actually beneficial.

1. The health system actors are guided by the Triple Aim framework.

When?	What?	Who?
2019	Developing a publication in which the Triple Aim framework is presented and explained with the aid of examples	→ SAMS
2020	Organising a conference at which the Triple Aim framework is presented to the relevant actors and explained with the aid of examples	→ SAMS
	Launching Triple Aim pilot projects in various settings (hospitals, group and individual practices, health regions)	→ Cantons; H+ and/or individual hospitals; Physician networks; Associations of towns/communes
	Developing a proposal for the establishment of a Federal Health Act	→ SAMS
From 2021	Admitting visionary leaders to the Senate as individual members	→ SAMS
	Annual conference for the presentation of Best Practice models for implementation of the Triple Aim framework	→ SAMS
2023	Bill for the establishment of a Federal Health Act	→ Federal Council

2. The cantons combine to form a small number of health regions.

When?	What?	Who?
2020	Commissioning a study to document existing cross cantonal associations in the health sector and examine legal and organisational questions	→ SAMS
2021	Carrying out «experiments» in a healthcare region	→ Cantons; Health insurers

3. Efforts to promote health literacy begin in childhood.

When?	What?	Who?
2019	Joining the Swiss Health Literacy Alliance	→ SAMS; Other actors
	Organising a dialogue with the relevant actors	→ Swiss Health Literacy Alliance
2020	Identifying Best Practices in various settings (daycare centres, schools, youth organisations, training)	→ Swiss Health Literacy Alliance
	Designing a pilot project in cooperation with a canton	→ Swiss Health Literacy Alliance; Careum; Canton
	Developing evidence-based aids for patients and professionals	→ Swiss Medical Board; Supporting association «smarter medicine»

4. Switzerland knows how many health professionals are required and adjusts the number of training places accordingly.

When?	What?	Who?
2020	Establishing a national steering committee for the training of health professionals (cf. SAMS position paper and the «Future of medical education»/ZäB platform)	→ FOPH
	Financial support for innovative new healthcare models in the initial phase	→ Cantons, in cooperation with other partners, as appropriate
2021	Introducing positive and negative financial and other incentives for regions and disciplines where care provision is inadequate/inappropriate	→ Cantons

5. The data required for quality assurance and health services research is available.

When?	What?	Who?
2020	Developing proposals for long-term financing of health services research	→ SAMS
	Assessing to what extent the Swiss Personalized Health Network's (SPHN) data management framework could also be relevant for the Electronic Patient Record (EPR)	→ SAMS
2022	Assessing to what extent, in a new Federal Health Act (cf. Measure 1), the legal foundations could be established: <ul style="list-style-type: none"> - for the financing of health services research - for the use of health data (including Health Insurance Act data) - for the creation of a Trust Centre to process and manage health data in accordance with legal requirements for (health services) research 	→ Federal Council
	Adapting the Cancer Registration Act to allow for additional registries	→ Parliament
2023	Revision of the Federal Act on the Electronic Patient Record (EPRA): abolition of voluntariness for outpatient service providers and patients; data standardisation (→ usability for registries and quality assurance)	→ Parliament

6. Interventions no longer needed are removed from the list of reimbursable services.

When?	What?	Who?
2019	Publication of HTA reports	→ FOPH; Swiss Medical Board
2020	Simplifying the procedure for removing interventions from the list of reimbursable services	→ FOPH
	Increasing the frequency of publication of HTA reports	→ FOPH
	Processing the results of HTA reports for professionals and patients	→ Swiss Medical Board
2022	Ensuring that recommendations from «smarter medicine» lists have consequences (i.e. may possibly lead to the removal of the intervention concerned from the list of reimbursable services)	→ FOPH

7. New reimbursement models reduce perverse incentives.

When?	What?	Who?
2020	Presenting the various managed care models	→ fmc
	Launching pilot projects with new reimbursement models which reduce the perverse incentives inherent in the current tariff structure (Tarmed, DRG)	→ Tariff partners
	Introducing monistic financing for the health system, as part of a revision of the Health Insurance Act	→ Parliament
2021	Introducing the «experimentation article», as part of a revision of the Health Insurance Act	→ Parliament
2022	Assessing the abolition of tariffs for individual services	→ FDHA

8. The federal government sets a ceiling on increases in health expenditures.

When?	What?	Who?
2020	Developing empirical, legal and ethical foundations for the setting of a ceiling, should this be required	→ FOPH

Carefully formulated proposals as to how and under what conditions this measure could be implemented have already been made in the expert group's report on «Cost containment measures to relieve pressure on the compulsory health insurance scheme».

