
Master in Human Medicine in Ticino

In-depth report

Study Group
"Scenarios for structuring a Master in Human Medicine in Ticino"
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Contents

Abbreviations	3
Executive Summary	4
1 General considerations	6
1.1 Recapitulation of the conclusions of the Feasibility Report "Master in Human Medicine in Ticino" of 28 January 2011	6
1.2 Models of medical education.....	6
1.3 Integration of education at USI with Switzerland's university strategy	6
1.4 Educational model	6
2 The plan for clinical training at USI (Master in Human Medicine)	8
2.1 General hypotheses	8
2.2 Students	9
2.3 Examinations and accreditation.....	10
3 Educational model	11
3.1 Reference model.....	11
3.2 USI's educational model	11
3.2.1 Lecture-based courses	12
3.2.2 Seminars and practice.....	13
3.2.3 Research.....	14
3.2.4 Collateral teaching	14
4 Timescale for implementation	16
5 Institutional aspects.....	17
5.1 Constituent Committee and Faculty Council	17
5.2 Agreements with the universities	17
5.3 Agreement with the CRUS and the CUS.....	17
5.4 Cooperation with the Federal Office of Public Health	17
6 Funding and costs	18
6.1 Revenues.....	18
6.2 Cost forecast	18
7 Logistics: forecast regarding facilities	21
7.1 USI facilities.....	21
7.2 Facilities: EOC and other clinical structures.....	21
8 Impact of the Master in Medicine on the Canton's hospital system	22
9 Communication measures/Collateral measures.....	22
10 SWOT analysis.....	23
Chronology.....	26

Tables

Table 1: Changes in number of registrations for the aptitude test and available places.....	9
Table 2: Income for the three MA years (UFG and IAU)	18
Table 3: Costs of the Master programme	18

Abbreviations

BA	Bachelor
BE	University of Bern
BS	University of Basel
CdS	State Council
CRUS	Rectors' Conference of Swiss Universities
CUS	Swiss University Conference
EMS	Aptitude test for the study of medicine
EOC	Ente ospedaliero cantonale (Multi-site Hospital of Ticino)
FMH	Swiss Medical Association
FR	University of Fribourg
GC	Cantonal Parliament
GE	University of Geneva
HM	Human Medicine
IAU	Intercantonal Agreement on Universities
IOR	Institute of Oncology Research, Bellinzona
IOSI	Oncology Institute of Southern Switzerland
IRB	Institute for Research in Biomedicine, Bellinzona
KVG	Federal Law on Health Insurance
LS	University of Lausanne
MA	Master
NC	Numerus clausus
NE	University of Neuchâtel
UFG	Federal Law on Financial Aid to Universities
UZH	University of Zurich

To make our report more readable, we have used only the masculine gender (he, his, etc.), which also includes persons of the female sex.

Executive Summary

As a result of the contacts we have established at the cantonal level, with Swiss medical faculties and with federal government departments, we have reached the following working hypotheses.

Structural/institutional level:

Medical faculties are organised in very different ways. It is therefore necessary to opt for **priority** – but not exclusive – **cooperation** with one major Swiss medical faculty. We have opted for the faculty of Zurich, because of its willingness to cooperate, geographical proximity, existing collaborations in the field of education and the large number of students from Ticino who are enrolled there. We have received a positive response from the Department of Education, the Rector's Office and the Faculty, and it has been possible to set up a joint study group.

Swiss medical faculties have adopted the Bachelor (BA) and Master (MA) model, even though some, in particular Zurich, have maintained the structure of **a two-year preparatory course followed by a four-year clinical course**. Under the Intercantonal Agreement (IAU), the third BA year is paid in the same way as the subsequent MA years. USI's project is based on a three-year BA and three-year MA model, leaving open the possibility of collaboration for the third year of the BA programme.

Operational level and resources:

Students: The aptitude test system for allocating study places has proven its worth. In 2012, 2,337 candidates took the test to obtain one of 745 places. Candidates can indicate their university of preference, but they are allocated to the various faculties based on a series of different factors, including the number of available places and their scores in the test.

The idea is to increase the number of places by 100 and allocate them to USI. Taking into account the number of candidates and of available places, this increase of 100 places does not mean a reduction in quality, and the students enrolled at or assigned to USI will be in the upper part of the point score range. For the first three years (BA), they will be hosted by other faculties, before continuing with the three-year MA programme at USI.

Clinical resources: The lack of places for practical work and clinical seminars was pointed out as the major limitation regarding the increase of training places in existing faculties. A simulation confirmed that it would be possible to provide sufficient opportunities in Ticino, without putting a strain on affiliated faculties (i.e. faculties with which USI has concluded a cooperation agreement).

Teaching resources: It will be necessary to employ about ten full professors, operating both at USI and in clinical structures. Other courses will be taught by teaching staff working on a contract basis. Based on the contacts that we have already established, there should be no difficulty in finding competent people.

Funding: The costs of education, calculated based on various methods, can be covered by regular federal sources (UFG), cantonal and intercantonal (IAU) funding, plus a regular contribution to the project by the Canton of Ticino.

Logistics/facilities: A mixed study group has assessed the impact on the EOC and on other clinical structures. With regard to USI, the necessary premises have already been provided for with the new Lugano-Viganello Campus.

1 General considerations

1.1 Recapitulation of the conclusions of the Feasibility Report "Master in Human Medicine in Ticino" of 28 January 2011

Ticino's project should be seen as a contribution to solving an acute national problem.

Providing an education in human medicine in Ticino, which would be limited to the clinical phase, is an achievable objective and necessitates cooperation with other Swiss faculties as well as support from the Canton's public and private hospitals and clinics, cantonal institutions, the Ticino Medical Association (OMCT) and family physicians working in the region.

The financial flows outlined in the study show that the benefits would be commensurate with the costs borne by the Canton.

1.2 Models of medical education

Elsewhere in Europe, education is organised either in accordance with the Bologna model (3BA+3MA), or by combining a two-year preparatory cycle with four years of clinical training. In the United States, a Medical School consists of a four-year programme, which is preceded by a BA degree in a related discipline. The Swiss faculties have adopted the Bologna model, with a three-year BA cycle and a three-year MA cycle, even though some universities have maintained the structure of a two-year preparatory cycle followed by four years of clinical training. The Intercantonal Agreement (IAU) has maintained the subsidy of CHF 25,000 for the first two years and CHF 50,000 for the four clinical years.

Our discussions with the various medical faculties confirmed that the main difficulty in increasing the number of study places arises at the beginning of the clinical training programme, in the third BA or first MA year.

1.3 Integration of education at USI with Switzerland's university strategy

Students need to be educated in all areas of medicine, but where research is concerned (particularly basic research), it would be wise to concentrate on just a few institutions, some of which already exist, so as to guarantee excellence. This is in line with Switzerland's university strategy, which tends to avoid structures that are too small and therefore incapable of achieving the necessary level of quality. For teaching purposes, we will need to rely on both full professors, who would be integrated with the EOC or with other clinical structures, and on teaching staff working on contract basis (who perform their clinical and research activities at their own universities or hospitals).

1.4 Educational model

The educational model for physicians (and for care personnel in general) is at the centre of current studies and discussions: the transformation of the medical profession and organisational changes in the way care is delivered necessitate a reconsideration of education. A recent report in the review *Lancet* [J. Frenk *et al.*, *The Lancet* 376, 1923 (2010)] insists on the importance of team education and of inter-professional education, as well as on the need for a balance between scientific, social and personal skills. The patient is regarded as the centre of the education process, not only in cutting-edge health

facilities, but in the whole range of care and life situations: the patient can become an actor in the teaching process.

Medical education methods should, however, not be reduced to mere teaching techniques, but should consist in an effort to place the young doctor's learning process in the real context of the profession. This means taking into account the request to emphasise basic medical training, avoiding situations in which, during his education, the student is dealing exclusively with the cutting-edge aspects of medicine. The creation of an Institute of Family Medicine ("Hausarztmedizin"), as part of the project being formulated by the Swiss University Conference (CUS), is an opportunity that we can build upon.

E-learning, simulations and new technologies also offer promising teaching tools.

2 The plan for clinical training at USI (Master in Human Medicine)

2.1 General hypotheses

This in-depth report is based on the following working hypotheses:

- **Choice of a primary partner:** the diversity of educational models applied by Swiss medical faculties makes it necessary to opt for a **primary, though not exclusive, partnership** with one medical faculty. We have chosen the University of Zurich (UZH), because of its geographical proximity, the large number of students from Ticino enrolled there, and its willingness to create a partnership. It is also important to mention that the Cardiocentro (CCT) has recently been recognised as a teaching institution ("Lehrspital"), by the UZH Faculty of Medicine. The EOC, for its part, is setting up a similar collaborative venture with UZH (see letter from the Dean of the UZH Faculty of Medicine dated 20 November 2012), whereas its hospitals will soon become "Lehrspitäler" of the UZH Faculty.

There is also the special case of cooperation with the **University of Fribourg**, which has recently completed its BA education programme in order to gain accreditation for this study cycle. We can therefore expect an increase in the number of BA students at the University of Fribourg, who would then continue their studies at USI, under a special agreement.

- **Structure of the education:** The faculties – whether they have a system of two preparatory years with clinical training beginning in the third year, as at UZH, or whether they adopted the Bologna model, like other universities – have informed us that problems of capacity (the famous "bottle-neck") already emerge starting from the third year of the BA programme.

The **BA** studies will be organised at various host faculties in accordance with their respective models. The **MA education** will take place at USI, primarily in partnership with UZH, but also with other Swiss faculties. Until USI's MA programme will have been accredited, the MA diploma will be awarded jointly by UZH and USI.

- **Concentration on a few high-level research institutions** for basic research and cooperation/networking for teaching and research in other disciplines, in line with the development strategies of Swiss universities.
- **Special attention given to teaching methods**, so as to set the medical student's learning process in the real context of the profession: relationship with the patient, teamwork, scientific knowledge, social skills.
- **Differentiation of opportunities to gain practical experience:** apart from practical training in hospitals and clinics, it is foreseen that students gain experience in medical practices and in local health-care structures. This differentiation is particularly important to give due attention to family medicine ("Hausarztmedizin"), not just cutting-edge aspects of the profession.
- **Language of instruction:** In line with the experience of other USI faculties, we need to speak of languages in the plural. At the patient's bedside and in clinical training the main language will be Italian; for group teaching, the language prevailing within the respective group will be used; for classroom lessons/lectures, English will be the language of choice (though other languages may be used to maximize e-learning opportunities).

2.2 Students

Our preference is to use the aptitude test for the study of medicine (EMS) to obtain an increase in the number of study places allocated to USI. This procedure, which still has to be approved by the CRUS and the CUS, implies a registration at USI already at the beginning of a student's medical studies, or some other form of binding commitment to continue his MA education at USI.

The present procedure of selection by aptitude test has proven itself scientifically valid, by selecting candidates with high success rates.

The procedure for allocating places, which is managed by the CRUS, has yielded positive results [see EMS Report - K.-D. Hänsgen und B. Spicher, Bericht 19 (2012), p. 11]; an increase in the number of study places is a political decision that is compatible with the aptitude test.

	Total number of candidates	Candidates from Ticino	Number of awarded places	%
2000	678	26	652	98
2005	1107	21	624	56
2011	2172	86	745	34
2012	2337	103	745	32

Table 1: Changes in number of registrations for the aptitude test and available places.

The steady increase in interest in medical studies is not reflected in an increase in the number of study places. Candidates are awarded a place based on their ranking in the test and on the number of available places. Exclusion does not mean that a student is not qualified for medical studies; therefore, an increase in the number of study places would not have a negative impact on quality. This point is also underlined in the 2012 EMS Report. In addition, the Report contains an in-depth analysis of how the results in the three linguistic regions differ: in 2012, the difference between the results of German- and Italian-speaking candidates was modest, far less significant than in earlier years (see page 69).

The Confederation and the Cantons have decided to increase the number of study places at existing faculties, so as to obtain an additional 300 qualified physicians in 2019-20. Ticino's project foresees a **further increase of 100 study places to be allocated to USI**: as with the other universities, students may indicate USI as their preferred university or be assigned to USI by the central authority. Students are registered at USI starting from their first semester. For their BA education, they are hosted by partner universities with, if requested, the cooperation of USI in the third year. They then continue with their MA studies at USI.

An access to education without an aptitude test, as occurs at the universities of Geneva and Lausanne, is not appropriate for our project, since it does not provide a criterion for selecting candidates, awarding places and assigning a faculty already at the moment of registration. This does not mean that it is not possible to cooperate with the faculties of Geneva and Lausanne, which have expressed great willingness to be involved, both in the selection of individual students after the BA and in the consideration of a different model of transfer from their BA programmes to USI's MA programme.

We particularly need to examine the possibility of cooperation with the University of Fribourg, which offers a full BA programme, but no MA programme.

In 2012, 745 places were awarded, 20% more than the actual number of available places. This could mean that, if an additional 100 places were allocated, we shall effectively obtain 80 places as part of the Ticino project and, assuming a drop-out rate of 10% during the BA programme, 70 students for the MA programme. These figures will be achieved gradually, depending on enrolments and on cooperation with other faculties.

In case a registration at USI (or some other form of binding commitment) already at the beginning of the BA programme should not be possible, we would have to explore the possibility of concluding bilateral agreements with individual universities, governed by cantonal law. This report is based on the hypothesis that students will be assigned to USI starting from their first semester. If necessary, USI might contribute further by increasing clinical practice resources for the third year and by offering teaching sessions to students to make their enrolment at USI a more concrete reality.

Foreign students

Art. 12 of the Federal Law on Academic Medical Professions of 23 June 2006 stipulates that holders of a Swiss high school-leaving certificate or a qualification recognised under federal law may participate in the federal examination. On 12 October 2006, the CRUS issued Recommendations on the conditions under which foreign students (citizens of Liechtenstein, foreigners residing in Switzerland, refugees, etc.) might be admitted for medical studies. The cantonal universities adopted the CRUS's recommendations and implemented them. During a study programme, the admission of foreign students who have successfully completed education abroad is subject to the availability of places.

In fact, due to the initial conditions for admission (CRUS), admission to the state examination (federal law) and the shortage of available training places, foreign students holding a foreign high school-leaving certificate are admitted only in exceptional cases.

Also the situation of Swiss students at foreign universities deserves special attention: they are able to access clinical training subject to an assessment of previously acquired skills.

2.3 Examinations and accreditation

The BA diploma is awarded by the affiliated university (i.e. the university with which USI has concluded an agreement regarding BA education).

The MA diploma is awarded by USI in conjunction with UZH. The application for accreditation will be initiated as soon as possible. However, accreditation will not be granted until a full cycle has been completed and the first MA diplomas have been awarded. Once the accreditation formalities are completed, the award of MA diplomas can be reviewed.

3 Educational model

For BA education, we refer to the models of the individual faculties hosting students who are registered at USI. Relations between USI and the hosting faculties will be defined in a general agreement, set up in consultation with the CUS and the CRUS.

We shall therefore limit ourselves to describing plans for the MA programme.

3.1 Reference model

A mixed UZH-USI study group has been established (see letter from UZH Rector dated 23 October 2012) to explore and define a basis for cooperation.

The MA model described in this report has therefore been formulated by adopting the model proposed by the UZH Faculty of Medicine as our reference. In terms of content, it does not differ substantially from those proposed by the other Swiss faculties. In terms of teaching methodology, it still favours classroom teaching/lecturing, rather than small-group teaching, which makes it easier to be implemented in our academic and clinical setting.

In the first year of the MA programme, the UZH model includes theory lessons grouped into thematic modules ("Themenblöcke"), optional subjects ("Mantelstudium") and practical courses ("Kurse und Praktika"). The second year of MA studies is entirely devoted to hospital practice ("Wahlstudienjahr"). The third year comprises further thematic modules, clinical courses ("Differentialdiagnose"), tutorials, the composition of the MA thesis and preparation for the state examination.

3.2 USI's educational model

Taking the UZH model as a basis, we carried out a simulation to identify the resources that are potentially present in Ticino, on the premise that medical education necessitates close cooperation between the university and clinical structures (EOC structures and others), both for theoretical education (usually delivered by habilitated head physicians, both full professors and free lecturers) and for practical training (often delivered by non-habilitated physicians, generally heads of clinic). Only with joint planning efforts by the University and clinical structures it will be possible to attract top-level teaching staff and clinicians, which will, in turn, also improve the quality of hospital care. Although there are no standard models, generally a head physician with teaching responsibilities will devote 60% of his time to the hospital and 40% to the university (teaching and research). Universities and hospitals then stipulate contracts, working conditions and financial contributions by mutual agreement.

Also for periods of practical training, dialogue and coordination are vital because the student has to be able to rely on physicians, heads of department and heads of clinic, in particular; they should therefore be able to devote time to the students and to thus impart their knowledge and skills. Moreover, these physicians, who will be adequately remunerated for their teaching duties, will also need to be equipped with the necessary teaching skills to provide quality teaching, and they will have to be guaranteed adequate career development prospects.

For managing the Master in Medicine, it will also be necessary to set up bodies to ensure coordination between USI and the clinical structures, and certain procedures will have to be established, first of all a procedure for appointing teaching staff who are engaged in clinical activities. Regarding selection pro-

cedures, which must comply with the standards of other Swiss medical faculties, it will be necessary to achieve a good balance between clinical, scientific and teaching skills and abilities. All of these aspects will need to be the subject of specific agreements between USI and the hospitals. These agreements will also have to define financial aspects, on the premise that, based on the hospitals' current funding arrangements, the costs of basic training and research must be borne completely by the University.

In line with the general considerations, there is also a need for close cooperation with general practitioners (GPs) active in the Canton, alongside whom students will receive an important part of their practical training.

The Board and General Management of the EOC, having consulted with the EOC's Clinical Coordination Committee, have confirmed, in a letter dated 9 August 2012 (cp. attachment), their full support for the MA programme, since it can make a significant contribution to growth in health-care provision and research, and since it would represent a noteworthy factor in attracting new physicians willing to perform clinical functions in the EOC's hospitals.

The Committee of the Canton Ticino Medical Association has also expressed interest in this project, especially with regard to its potential impact on the development of family medicine.

3.2.1 Lecture-based courses

Lecture-based courses are generally taught by habilitated physicians. In any case, the objective is not to have all teaching covered by full professors. Based on our contacts with other medical faculties, it is clear that cooperation with teachers on contract basis and other forms of cooperation are absolutely possible. Part of the teaching could also be delivered by non-habilitated physicians active in the Canton who have wide-ranging clinical experience and documented teaching skills, as in fact occurs in other Swiss medical faculties.

We might, for instance, consider setting up around 10 chairs with professors who are recruited at USI, who perform clinical activities in cantonal institutions and who have adequate resources for clinical research. These chairs would be responsible in particular for managing the related "block-topics".

This is an objective that we would achieve gradually, in close cooperation with the EOC, private clinics and, if possible, cantonal institutions. Tentatively, we might envisage the following chairs, with their related modules:

- | | |
|------------------------------------|---|
| 1. Internal Medicine | Nephrology/Metabolism/Care of the elderly |
| 2. Surgery | |
| 3. Paediatrics | Children and adolescents |
| 4. Gynaecology-obstetrics | |
| 5. Psychiatry | Mental states and behaviour |
| 6. Pathology | |
| 7. Oncology | Blood and neoplasms |
| 8. Neurology | Nervous system |
| 9. Cardiology | Heart and cardiovascular system |
| 10. Social and preventive medicine | Social and preventive medicine / law |
| 11. Family medicine | Bridge module between MA and FMH specialisation |

This list is purely indicative, based mainly on the UZH modules. Some chairs are nevertheless indispensable from the outset, particularly those covering the "major medical disciplines" (internal medicine, together with geriatrics, surgery, paediatrics, gynaecology-obstetrics, psychiatry and pathology), which also involve a heavy teaching load. Other chairs, in turn, would have the task of adding considerable value to the centres of reference already present in the Canton: oncology (IOSI), cardiology (CCT), neurology (Neurocentro). Other areas in which Ticino has a reputation for being innovative, e.g. palliative care, could be promoted by recruiting a full professor and providing him/her with the necessary resources for research. In the same light, the presence of the IRB should make it possible to organise specific courses in the field of basic immunology, strengthening the UZH biomedical sciences option. This option might be of special interest to young doctors who intend to later go into research.

The Canton Ticino Medical Association's significant commitment to promoting family medicine justifies the creation of a chair dedicated to this discipline. Apart from providing specialised education, this chair might contribute to the promotion of a medical culture favourable to family medicine already within the context of basic education. This chair could be associated with an "Institute of Family Medicine" along the lines of the one operating, for example, at UZH ("Institut für Hausarztmedizin"). Such an institute could form a bridge between basic and FMH education, possibly benefiting from the financial subsidies the Confederation intends to provide for the promotion of family medicine.

The holders of these chairs will be supported by teaching staff working under contract to cover the complementary topics in the modules, and to take over some of the teaching load for the main topic. The contract staff will also be responsible for managing modules not directly linked to the chairs and for which the Canton lacks the critical mass and research activity to be able to offer them.

Finally, we should not overlook the possibilities of e-learning, of simulations and in general of opportunities offered by new technologies.

3.2.2 Seminars and practice

In our discussions with medical faculties, it became clear that it will be difficult to provide further training places in the clinical structures of Cantons with such faculties, as they are already having difficulties in finding places for local students. An essential condition for offering education in Ticino is therefore the ability to guarantee sufficient resources for 70 students, without having to appeal to the existing network of university hospitals.

Practical training is heavily dependent on patient volumes, which, in turn, are closely related to population numbers. In this respect, it has to be frankly acknowledged that the "pool" of patients in Canton Ticino (62,000 patients hospitalised in 2010 in the somatic-acute sectors, rehabilitation and psychiatry, representing a total of 570,000 days of treatment), even when taking into account the inflow of patients from other Cantons and from abroad, is nearing its limits.

Nevertheless, the analysis showed that it is feasible to offer periods of practice and seminars according to the UZH model, provided that we can count on the cooperation of all the Canton's clinical structures. In the simulation, we concentrated the periods of practice on the first 14 weeks of each semester. However, stretching out the practice over a longer period increases the possibilities, particularly in disciplines involving many hours of practical teaching, those exercised in one or just a few hospitals, and low-

volume "sub-disciplines". This training, held predominantly in the afternoons, will require a major reorganisation of treatment activities, as these will have to be brought in line with training activities. To compensate for the burden of the teaching activity, we plan to recruit additional heads of clinic in the various hospitals that become involved in practical training (equivalent to a total of twenty full-time positions). The related costs are accounted for in the estimates given under point 6. In view of the present market conditions, finding such physicians will not be easy, so these jobs will have to be made attractive regarding both material terms and career development prospects.

As for practical training, we should also be able to count on the willingness of family doctors to take on the 70 students for at least 20 hours of teaching during the first year of the MA programme.

3.2.3 Research

As was already stated in our report from January 2011, valuable clinical research is currently being performed in Ticino, concentrated mainly at the EOC institutions and the Cardicentro. This activity will continue to be of relevance to hospitals and clinics. EOC research activities will be organised around the new Clinical Trial Unit, from which also institutions that do not belong to the EOC could benefit, given appropriate cooperation agreements.

Basic research, in turn, should be concentrated mainly at the IRB, the IOR, the Neurocentro and, gradually, at the new chairs endowed with specific funding for research. The objective is still to concentrate on a few disciplines, so as to ensure a critical mass and quality comparable to that of the other Swiss university institutes. At the major Swiss universities, this activity is generally managed directly by the faculty. When the MA programme will be instituted in Ticino, it will therefore be necessary to reorganise basic research, which will also have the effect of promoting synergies among the different institutions. From an institutional point of view, the affiliation model, recently adopted by USI and the IRB, could provide an interesting solution, also to ensure higher financial transparency.

As is shown in the estimates set out under point 6, research will benefit from significant financial subsidies if the MA programme is instituted, and this would considerably improve the existing framework of support.

3.2.4 Collateral teaching

USI has developed competencies (teaching and research) in fields closely related to medicine. These are important assets, especially if we take into account the changing profile of the medical profession and the skills now demanded of doctors. It is worth mentioning:

- E-health
- Health economics
- Health communication

These competencies would enable us, as the Federal Office of Health also hopes, to develop new lines of research, particularly in the field of multi-disciplinary care ("Versorgungsforschung"), in which Switzerland is well behind other European countries.

In Ticino, we have seen a consolidation of other education activities in the medical field with the potential to strengthen basic training, in particular:

- Medical humanities
- the ESO (European School of Oncology)
- the ESASO (European School for Advanced Studies in Ophthalmology)

4 Timescale for implementation

It might be helpful to repeat what we already mentioned on page 30 of our first report, where we spoke of four project phases. Since the Report of 28 January 2011, the start of courses has been postponed by one year, partly due to delays in our negotiations with UZH. An overview of the timescale is also necessary in order to define the Canton's contribution to the various phases.

- **Phase 1** can be regarded as concluded with the presentation of the Report of 28 January 2011 and its acceptance by the State Council (Consiglio di Stato/CdS).
- **Phase 2** (preparatory period 2012-14) – the current phase – is based on the Government Resolution of 1 March 2011 (attached). It comprises an approval of the Report by the CdS, preparation of the Message and discussion to be followed, hopefully, by approval from the Cantonal Parliament (Gran Consiglio, GC). At the same time, preparations are made for the Agreements with UZH and with other universities, for the increase in the number of places allocated under the NC, for the creation of the constituent bodies at USI, for the definition of procedures for appointing the first members of the teaching staff, as well as for the agreement with the EOC, the clinics and doctors in private practices. Obviously, these agreements cannot be ratified and come into force until the GC has given its approval but, to avoid a loss of time and to give the GC a clearer picture, they are being prepared beforehand.
- **Phase 3** (BA period: 2014-2017) comprises the allocation of an additional 100 training places to USI (spring 2014) and the beginning of future USI medical students' BA programmes at the affiliated faculties (autumn semester 2014/15).

It will be necessary to strengthen the constituent bodies, to recruit the first teaching staff and to prepare the educational model and teaching programmes.

- **Phase 4** (MA period: 2017-2020) sees the start of MA courses at USI (autumn semester 2017/18), the continuation of BA studies in affiliated faculties, and completion of the teaching staff appointment process. The phase ends with the award of the first MA diplomas and the first students taking the state examination (summer 2020). The application for accreditation will be made during this phase, which should conclude with the award of the first MA diplomas.

5 Institutional aspects

5.1 Constituent Committee and Faculty Council

Phase 2 will see the appointment of a Constituent Committee consisting of members designated by USI and representatives of the clinical structures, UZH, other affiliated universities and a federal body.

The task of this Committee will be to prepare for all aspects of phase 3, in particular the procedures for the definition of the role and competitive selection of teaching staff, the registration of students, collaboration with other faculties, and the arrangements for BA examinations. The Constituent Committee will complete its work at the beginning of the MA programme by setting up a Faculty Council comprising USI teaching staff and teachers from the affiliated faculties.

Without trying to anticipate the decisions of the Constituent Committee, special attention will be given to the procedure of competitive selection and appointment of the first teachers. As in the other faculties, it will be necessary to appoint a Committee consisting of USI representatives, the reference faculty and the EOC (or another clinical body). The committee will take into account the clinical and academic competencies of the candidates and, as was already emphasised, the procedure will be applied with extreme rigour, because the success of the MA programme will depend very much on the quality of the teaching staff. To avoid misunderstandings, we would like to point out that there will be no automatic recruiting of head physicians active in Ticino who are already performing university teaching functions.

5.2 Agreements with the universities

It will be necessary to stipulate agreements with our reference university (UZH) and with other affiliated universities regarding the education of BA students registered at USI and preparation for collaboration on the MA programme (teachers recruited on a contract basis, periods of practical work, e-learning, etc.). In particular, it will be necessary to define procedures for cooperation with the universities hosting our students for their BA studies, and with UZH with regard to the award of the MA diploma.

5.3 Agreement with the CRUS and the CUS

A decision has to be taken regarding an increase in the number of places allocated under the NC procedure and assigned to USI. There also needs to be further evaluation of the legal aspects of continuing MA studies at USI for students who have been awarded places on the basis of the aptitude test and assigned to USI. Taking into account the changes under way at federal level, USI and the Department of Education, Culture and Sport (DECS) have contacted both the CRUS and the CUS asking them to participate in the study groups that are being set up to consider the various areas of medical education (see attached letters).

5.4 Cooperation with the Federal Office of Public Health

This involves cooperation regarding the general arrangements for medical education, taking into account the Confederation's objectives for family medicine, and the coherence of such education in the light of the new challenges posed by evolving health-care needs.

6 Funding and costs

6.1 Revenues

Forecasts are based on current data regarding UFG contributions, the IAU, fees and revenues from competitive research.

A special agreement will be stipulated with the Canton, with criteria that will be different from the Performance Contract, taking into account the new task being taken on by USI.

Sources of income	Per student (in CHF)	For 210 students (in CHF)	For research (in CHF)
IAU	50,000	10,500,000	
UFG	16,000	3,360,000	
Fees	* 4,000	630,000	
Competitive research			2,200,000
UFG (LPSU) - research			1,,100,000
Total teaching	70,000	14,490,000	3,300,000
Total teaching and research			17,790,000

Table 2: Income for the three MA years (UFG and IAU)

* A reduced fee of CHF 1,000 is planned for fifth-year students.

6.2 Cost forecast

Based on the UZH model, we forecast the following costs once the programme will be fully operational (using 2012 price and salary levels) for the 3 full years of education (academic year 2019/2020):

Costs	
Full professors	2,750,000
Purchase of teaching hours	769,000
Cost of practical teaching	3,600,000
Administrative costs of medical studies	288,000
Cost of training candidate physicians	1,155,000
Salary of candidate physicians	630,000
Cost of Master theses	525,000
<i>Partial total</i>	<i>9,717,000</i>
Costs of technical, administrative and library staff	971,945
Research	5,500,000
General running costs	6,939,000
Total costs	23,130,000

Table 3: Costs of the Master programme

The difference between income (Table 2) and expenditure (Table 3) amounts to approximately CHF 5.5 million. This amount is the basis for calculating the Canton's regular annual contribution when the programme will be fully operational after 2020.

Going back to the considerations of our Report of 28 January 2011, the School will concentrate initially on its teaching function. Research would, however, benefit from significant support thanks to the en-

dowment expected for the chairs, the additional support granted to individual chairs (CHF 3,300,000 in total) and a contribution of CHF 200,000 per chair for the acquisition of projects funded by third parties (ultimately totalling CHF 2,200,000). As was already mentioned, there would be no change in the present levels of funding for the IRB, the IOR and the Neurocentro, the three existing research structures. As we have seen with other USI faculties, by increasing the numbers of full professors, students and research projects, it will be possible to significantly increase the volume of scientific research undertaken in the Canton.

Though starting from a different basis of calculation, these forecasts substantially confirm the findings of the Report of 28 January 2011.

Furthermore, the CdS's Message to the Cantonal Parliament of the Canton of Fribourg regarding the creation of the third year of the BA programme at that university is correlated with an analytical financial plan for 80 students. Even though they operated quite independently and with different parameters, the general figures of their plan confirm the forecasts of this report.

Using the data set out in Table 3, we have been able to extrapolate data for the first two years of the MA programme: 2017/18 (70 students) and 2018/19 (140 students). In the first year of the MA programme, we plan for 6 chairs, in the second for 8, to arrive at a total of 11 when the programme is fully operational. The contributions to research should match the increase in the number of chairs. The costs of practical training take into account the effective cost of teaching in hospitals and with GPs in the first and third years of the MA programmes and the costs of the second MA year, which is entirely devoted to practical training. The general costs have been calculated using the same percentages. The total costs are summarized in Table 4 at the end of this section.

Returning to the time phases for implementation, the financial needs to be covered by cantonal contributions could evolve as follows:

Phase 2 (2012/14): The Government Resolution foresees CHF 600,000 of funding, only a small part of which was used at the end of 2012. This sum could therefore be sufficient until autumn 2014, when the BA courses begin.

Phase 3 (2014/2017): We need to forecast the costs of the Constituent Council and the other institutional activities, as well as the costs of preparing the student teaching programme: an increase from CHF 0.5 million to CHF 0.9 million might be reasonable, amounting to a total of CHF 2 million for the three years.

Phase 4 (2017/2020): Based on our forecasts, we should be able to count on CHF 3.3 million each year for the first two years of the MA programme, and CHF 5.4 million for the final year, when the programme will be fully operational. This should be a reasonable amount of money for the subsequent years, with the funding included in the Performance Contract.

As for the regular cantonal contribution, it is possible to make the following forecasts:

- In the current financial plan (2011/2014), no contribution is required beyond the CHF 600,000 provided for in the Government Resolution of 1 March 2011.

- For the 2015/18 financial plan, we need to cover three BA years and the first MA year: a total of CHF 5.4 million for the four-year period (i.e. for the academic years 2014/15, 2015/16, 2016/17 and 2017/18).
- For the 2019/2022 financial plan: CHF 3.1 million for the second MA year and subsequently CHF 5.4 million per annum when the programme is fully operational, making a total of CHF 19.3 million (i.e. for the academic years 2018/19, 2019/20, 2020/21 and 2012/22).

As stated previously, these forecasts are based on 2012 prices, so they do not take into account any subsequent increase in the general price level.

Summing up, the situation presents itself as follows:

	<i>2014/15</i>	<i>2015/16</i>	<i>2016/17</i>	<i>2017/18</i>	<i>2018/19</i>	<i>2019/20</i>
<i>Costs</i>	<i>0.5</i>	<i>0.63</i>	<i>0.83</i>	<i>10</i>	<i>15</i>	<i>23</i>
<i>Cantonal contribution</i>	<i>0.5</i>	<i>0.63</i>	<i>0.83</i>	<i>3.5</i>	<i>3.1</i>	<i>5.4</i>

Table 4: Financial plan 2014/20

Given the difficulties in making forecasts about the structure of the BA programme, we have not included amounts for the period 2014/17 for BA education at affiliated universities. If it is USI that collects the federal (UFG) and intercantonal (IAU) contributions, an annual amount will need to be included, either as a cost item or as an item of expenditure, with a likely neutral result for the Canton.

7 Logistics: forecast regarding facilities

7.1 USI facilities

There are already plans to devote the following areas of the new USI Campus at Lugano-Viganello to MA education:

- Two 70- to 80-seat lecture theatres for 1st- and 3rd-year MA lessons (occupied predominantly in the mornings)
- Four 35-seat rooms for practical courses and seminars
- Rooms for small-group seminars
- Offices for teaching staff and assistants
- Offices for the Dean and his staff

The planned facilities on the USI Lugano-Viganello Campus are sufficient for all teaching activities that are not delivered in EOC hospitals and in other clinical structures. For practical reasons and for the sake of economy, it would be pointless to spread the theoretical teaching over a number of sites. The costs of these facilities (amortisation and interest payments) are included in the financial forecasts (Table 3, general costs).

7.2 Facilities: EOC and other clinical structures

In these structures, it will be necessary to provide space for practical training:

- Rooms for small-group courses (max. 15 students): approx. 20 rooms in total, spread over the various training institutions
- Offices for new teaching staff performing clinical activities: approx. 10 offices
- Offices for the new heads of clinic: approx. 10 offices with 2 to 3 workplaces
- New areas for basic research: planned for the new IRB (approx. 6,000 m² of additional space)

As stated previously, under the new hospital funding regime, the cost (amortisation and interest payments) of teaching and research facilities is borne completely by the basic training budget. The costs of these facilities are included in the financial forecasts (Table 3, general costs).

8 Impact of the Master in Medicine on the Canton's hospital system

Practically all medical disciplines are practised in Canton Ticino, including the highly specialised ones. They are, however, scattered throughout the Canton and divided between many public and private institutions, which is a complicating factor in the management of the MA programme in Medicine. Given good organisation, it should be possible to overcome this difficulty, at least initially. Moreover, even the Medical Faculty of the University of Zurich has to deal with around twenty hospitals (“Lehrspitäler”) spread over different Cantons (St Gallen, Grisons, Thurgau, Aargau, Lucerne and Glarus). In Canton Ticino, the lack of a specialised centre of reference may be a disadvantage. Recently, however, independently of the MMS, the process of centralising specialisations has been accelerated, following an initiative of the National Conference of Health Managers in the field of highly specialised medicine (HSM).

We emphasise again that, by virtue of the provisions of Art. 49, 3b) of the Federal Law on Health Insurance (KVG), the costs of research and university teaching cannot be part of the flat-rate amounts for hospital care. In the provisional budgets set out in point 6, all these expenses, including the cost of investment, are borne entirely by USI; therefore, they will have no impact at all on the base rates of the public and private hospitals involved in the management of the MA programme.

9 Communication measures/Collateral measures

On Thursday afternoons, starting from spring 2013, we plan to organise a series of meetings to discuss the topic of medical education in the wider field of public health. These afternoons could also serve to develop the competencies already present at USI and in the region:

- Health economics
- Health communication
- E-learning and the use of new technologies
- Training models in Europe (Careum, Federal Office of Health)

10 SWOT analysis

The project, though ambitious and demanding, is feasible subject to the conditions referred to in the introduction, and provided that the competencies present in Ticino are fully committed. There are, however, some significant weaknesses to be dealt with. Similarly, alongside significant opportunities, the project is not without risks. For the sake of transparency, in the attached table (SWOT analysis) we have taken into consideration all the strengths and weaknesses as well as the opportunities and threats.

Strengths	Weaknesses
<ul style="list-style-type: none"> • The completeness of the Canton's offer of health services • Its centres of reference (IOSI, CCT, Neurocentro, IRB) • The concentration of public hospital services in the EOC • The presence of a nucleus of habilitated doctors • Experience in post-graduate training (64 FMH certificates) • The important role of research in TI (300 peer-reviewed publications) • The training of medical students in EOC hospitals • The EOC Clinical Trial Unit • USI's competencies in sectors related to medicine • The other training centres in Ticino (ESO, ESASO, ESMO); DSANUSPSI • GPs active in basic and post-graduate training • OMTC initiatives in promoting family medicine 	<ul style="list-style-type: none"> • The critical mass of patients • Services scattered throughout many institutions • The small size of clinical structures • The shortage of teaching hospitals ("Lehrspitäler") • The limited experience of clinical structures in providing basic training • The presence of clinical structures without training and research activities • The coverage of training in sub-disciplines and psychiatry • The gap between the habilitated doctors available and those needed • Clinical research insufficiently integrated and coordinated • Limitations in facilities
Opportunities	Threats
<ul style="list-style-type: none"> • A contribution to solving the problem of shortage of doctors • Strengthening of USI in scientific disciplines • An increase in the social and economic impact of university activities • Spin-off for the industry sector • An important influx of federal financial resources • The development of clinical, training and research resources • Improvement in the quality of treatment (virtuous circle of research, education, assistance) • A strengthening of the Canton's market place in health • Head physician positions made more attractive • A reduction in dependence on foreign doctors • The possibility of introducing a MA programme in nursing • The possibility of establishing an institute of family medicine 	<ul style="list-style-type: none"> • Management of the NC unfavourable to USI • Financial risks in the event of a shortfall of students • The accreditation procedures • The difficulties involved in reconciling patient care and student education • The interest of hospitals, clinics, institutes, OMTC in the project • The interest of doctors in the project • The organisational rigidity of clinical structures • The possibilities for recruiting teaching staff • Potential conflicts between USI and hospitals in the selection of teaching staff/head physicians • Dependence on the reference university • The cost of the project

For the Study Group, the President

Piero Martinoli

Lugano, 21 December 2012

Study Group for the Master in Human Medicine

- Avv. Gabriele Gendotti, President of the Council of the Swiss National Science Foundation (FNSRS)
- Dr. Carlo Maggini, USI, former director of the EOC
- Dr. Mauro Martinoni, USI, former director of the University Studies Office of the DECS
- Prof. Sandro Rusconi, Director of the Governmental Division of Culture and University Affairs
- Albino Zraggen, General Secretary of USI
- Prof. Piero Martinoli, President of USI

Biographical references

- EMS – Eignungstest für das Medizinstudium in der Schweiz – Bericht über Durchführung und Ergebnisse – K.-D. Hänsgen und B. Spicher, Bericht 19 (2012)
- Medici di famiglia in Ticino: quale futuro? (General practitioners in Ticino: what future?) M. Egloff, F. Poletti, L. Bertini, B. Masotti, October 2012
- J. Frenk *et al.*, *The Lancet* 376, 1923 (2010)

Appendices

- Mandate from the Canton
- Chronology

numero			Belinzona
1304	lm	6	1 marzo 2011

Repubblica e Cantone
Ticino

Il Consiglio di Stato

preso atto del rapporto del Gruppo di studio "*Scenari per una strutturazione della formazione clinica in medicina in Ticino*" del 28 gennaio 2011 (in seguito Rapporto 2011) nel quale viene asserita la fattibilità di una formazione di master in medicina clinica basata in Ticino (*master medical school, MMS-TI*);

viste le "*Considerazioni finali*" del Rapporto 2011 che prevedono una Fase 2 di approfondimento per consentire la raccolta di tutti gli elementi di dettaglio su un modello di MMS-TI atta a preparare un eventuale Messaggio del Consiglio di Stato all'indirizzo del Gran Consiglio ai sensi dell'art. 3, lettera a della Legge sull'Università della Svizzera italiana, sulla Scuola universitaria professionale della Svizzera italiana e sugli Istituti di ricerca del 3 ottobre 1995;

sentiti i preavvisi del Presidente dell'Università della Svizzera italiana (USI), della Direzione dell'Ente ospedaliero cantonale (EOC) e della Direzione della Divisione della cultura e degli studi universitari (DCSU);

tenuto conto di quanto emerso in occasione della presentazione del rapporto 2011 al Consiglio di Stato il 15 febbraio 2011;

su proposta del Dipartimento dell'educazione della cultura e dello sport;

risolve:

1. Il Consiglio di Stato prende atto dei contenuti del Rapporto 2011 e ne autorizza la divulgazione.
2. L'USI assume il compito di procedere alla Fase 2 di approfondimento come descritta nella premessa in stretta collaborazione con la DCSU e l'EOC (Studio di fase 2).
3. Per lo Studio di fase 2, l'USI istituisce un gruppo operativo di studio adeguato e organizza il lavoro in collaborazione con il DECS, con l'EOC e con tutti gli altri Istituti cantonali e privati potenzialmente interessati, coinvolgendo pure i partner accademici ed istituzionali a livello intercantonale e nazionale.
4. Le conclusioni dello Studio di fase 2 devono essere riassunte in un Rapporto all'indirizzo del Consiglio di Stato con le seguenti indicazioni:

- a) proposte di convenzione fra le diverse istituzioni accademiche e ospedaliere interessate
 - b) analisi degli aspetti legislativi e regolamentari a livello cantonale e nazionale;
 - c) presentazione di un modello didattico compatibile con le esigenze e peculiarità dei partner implicati;
 - d) proposte e accordi sulle modalità di assunzione del corpo insegnante e di ammissione degli studenti;
 - e) presentazione di un modello sostenibile di consolidamento e di strutturazione delle attività ricerca;
 - f) proposte di soluzione per gli aspetti organizzativi e logistici,
 - g) dati attendibili su tutti gli aspetti finanziari sia nella fase di partenza sia nella fase a pieno regime (definizione dei costi di investimento iniziale, dei costi di gestione corrente, delle implicazioni per il contratto di prestazione fra USI e Cantone, dei prevedibili effetti sull'accordo intercantonale e sui possibili scenari per la politica sanitaria cantonale);
 - h) tempistica per il passaggio alla fase operativa e l'inizio dei primi corsi.
5. Il Rapporto dello Studio di fase 2 è consegnato al Consiglio di Stato entro il 30 aprile 2012. Il gruppo operativo di studio informa il Consiglio di Stato sul prosieguo dei lavori mediante una relazione intermedia. In caso di necessità, il termine di consegna del rapporto definitivo può venire dilazionato per un massimo di 12 mesi.
6. I costi aggiuntivi (i costi di personale e delle strutture regolari degli istituti interessati – USI, EOC, Cantone - non possono essere imputati) dello Studio di fase 2 sono preventivati in 600'000.- franchi annuali; l'EOC e il Cantone vi contribuiscono in ragione di un terzo ciascuno.
7. Il contributo cantonale all'USI è addebitato al conto 365 085 CRB 655 e l'importo vi è trasferito dal conto 361 012 CRB 655, mentre l'EOC versa il suo contributo direttamente all'USI.
8. Il contributo cantonale è erogato a consuntivo su presentazione di un conteggio finanziario semestrale; sono ammessi anticipi sino all'80% del contributo totale assicurato.
9. Comunicazione a: Dipartimento dell'educazione, della cultura e dello sport, Divisione della cultura e degli studi universitari; Area degli studi universitari; Università della Svizzera italiana, Via Lambertenghi 10A, 6900 Lugano; Ente ospedaliero cantonale, Viale Officina 3, 6500 Bellinzona; Sezione delle finanze.

PER CONSIGLIO DI STATO

Il Presidente:

L. Pedrazzini



Il Cancelliere:

G. Gianella

Chronology

Chronology	
Date	Activity
01.03.2011	Mandate from the State Council (CdS)
09.03.2011	Meeting with Steering Group, Lugano
05.04.2011	Meeting with USI in-house consultants, Lugano
16.06.2011	Meeting with Steering Group, Lugano
12.08.2011	Meeting with Prof. Kaiser, UniBAS, Basel
12.08.2011	Meeting with Prof. Russi, UZH, Zurich
24.08.2011	Meeting with Steering Group, Lugano
15.09.2011	Meeting with Steering Group, Lugano
28.09.2011	Meeting with Steering Group, Lugano
25.10.2011	Meeting with Prof. Russi, UZH, Zurich
12.11.2011	Meeting with Steering Group, Lugano
21.12.2011	Meeting with Steering Group, Lugano
06.02.2012	Meeting with Steering Group, Lugano
10.02.2012	Meeting with State Councillor R. Aeppli and Rector and Dean of UZH, Zurich
05.03.2012	Meeting with State Councillors M. Bertoli and P. Beltraminelli, Bellinzona
23.03.2012	Meeting with EOC Council, Bellinzona
03.04.2012	Meeting with representatives of the Federal Office of Health, Berne
04.04.2012	Meeting with Support Group, Lugano
04.06.2012	Meeting with Steering Group, Lugano
05.06.2012	Visit to UZH/USZ facilities
04-05.06.2012	Careum Congress, Zurich
18.06.2012	Meeting with the management of the Department for Society and Health, Bellinzona
04.07.2012	Meeting with the Rectorship and Medical Faculty, Geneva
04.09.2012	Meeting with Steering Group, Lugano
26.09.2012	Meeting with the President of the Ticino Medical Association, Mezzovico
17.10.2012	Meeting with the Committee of the Ticino Medical Association, Mezzovico
29.11.2012	Meeting with the President of Private Clinics, Clinica Luganese, Lugano
19.12.2012	Meeting with Support Group, Lugano