Clinical Care, Teaching and Research

At the Heart of the City

Report of the Commission d'analyse des projets d'implantation du Centre hospitalier de l'Université de Montréal et du Centre universitaire de santé McGill

April 2004

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List of members of the Commission d'analyse des projets d'implantation du CHUM et du CUSM

Mr. Daniel Johnson, Co-chair

Mr. Brian Mulroney, Co-chair

Mr. Marcel Villeneuve, Secretary

Mr. Robert G. Borduas

Ms. Lucie Des Groseillers

Ms. Mira Gauvin

Mr. Gilles Lacouline

Ms. Marlène Larivière

LETTER TO THE MINISTER OF HEALTH AND SOCIAL SERVICES

Montréal, April 16, 2004

Mr. Philippe Couillard
Minister of Health and Social Services
Government of Québec

Dear Sir:

Further to the mandate you conferred on us on October 29, 2003, we conducted studies and consulted experts to analyze the projects proposed by the CHUM and the MUHC in December 2003.

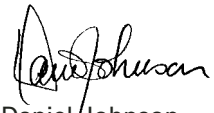
Executing these projects and building new CHUM and MUHC facilities appears to be necessary for the enhancement of academic medicine in Montréal and the province of Québec, thereby enabling these institutions to improve the care they provide to the population and to assume their leadership role in teaching and research.

As the Government of Québec prepares to commit huge sums of money to these projects, we would like to draw your attention to our recommendations, particularly as concerns the proposed sites, the financial framework, the issue of complementarity, and innovative approaches to control costs and finance these projects.

We would also like to underscore the exceptional work done by all members of the Commission over a very short span of time: their names appear at the beginning of this report.

We thank you for the confidence you have placed in us by entrusting us with this mandate; we remain available to provide you with any further information you may require.

Yours sincerely,



Daniel Johnson
Co-chair

Brian Mulroney
Co-chair

Marcel Villeneuve
Secretary

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Report of the Commission d'analyse des projets d'implantation du Centre hospitalier de l'Université de Montréal et du Centre universitaire de santé McGill

April 2004

1. EXECUTIVE SUMMARY OF THE COMMISSION'S REPORT

The Commission d'analyse des projets d'implantation du Centre hospitalier universitaire de l'Université de Montréal et du Centre universitaire de santé McGill was formed on October 29, 2003 (the "Commission"). Its mission is to analyze and evaluate the implementation projects of the Centre hospitalier de l'Université de Montréal ("CHUM") and the McGill University Health Centre ("MUHC") submitted in mid-December 2003 and to make recommendations as to their acceptability, having regard to the following parameters and conditions:

- the contribution of each project to the enhancement of academic medicine, notably by concentrating highly specialized services and by ensuring that each institution undertakes to implement medical practice plans;
- the complementarity between the two projects and within their respective integrated university health networks ("RUIS");
- lthe feasibility of each project within the budget framework established by the Government;
- the impact of each project on the urban fabric and the reuse of surplus buildings; and
- the coordinated execution of both projects.

In order to fulfill its mandate, the Commission had many discussions with both university hospital centres ("UHCs"), obtained expert reports on various aspects of both projects and heard the opinions of a number of people whom it invited to present briefs or who asked to be heard by the Commission.The Commission's analysis is based on the following principles:

- it has endeavoured to be fair, rigorous and thorough;
- it has adopted a patient-centred approach while taking into consideration the special mission of university hospital centres;
- it has considered the projects as means of enhancing academic medicine rather than as construction projects;
- it has been sensitive to the capacity of Québec taxpayers to fund the projects; and
- it has been forward-looking.

As a result of its analysis, the Commission has reached the conclusion that **the proposed projects are necessary and should proceed,** but that certain aspects need to be modified in order to comply with the parameters and conditions established by the Government of Québec.

A rapidly aging population, the accelerated pace of development of medical technology and the ever increasing costs that accompany such development will have a major impact on UHCs. For example, UHC facilities must be able to constantly adapt to technological changes, particularly those affecting specialized medical equipment. In addition, international competition to recruit and retain health professionals will force UHCs to offer them appropriate compensation as well as equipment and facilities commensurate with their highly sophisticated activities.

[1] *Proposition – CHUM 2010, December 2003, and McGill University Health Centre Redevelopment Plan, December 15, 2003.*

The Commission notes that, in the projects presented by the CHUM and the MUHC, little emphasis appears to have been placed on ways of enhancing academic medicine other than by the construction of new buildings. Consequently, the Commission's first series of recommendations invite the UHCs to develop this dimension of their respective projects and to define more clearly the goals to be achieved once the new facilities open, especially as regards the enhancement of academic medicine.

To better fulfill their role in enhancing academic medicine, **the UHCs must focus their activities more on highly specialized care** and propose a compensation system that encourages top-flight specialists to practise at the UHCs. The Commission has observed that the CHUM and the MUHC have been losing ground in the area of highly specialized services for a few years. That may result in less effective deployment of resources in this area (loss of teams representing a critical mass within the UHCs) and eventually a decline in teaching quality. Indeed, an aging population will require an increase in the supply of highly specialized services. The Commission is therefore recommending that the number of beds reserved for highly specialized care be increased both in the MUHC project and in the CHUM project.

The Commission is also recommending that **both UHCs allow a central and explicit role for human resources in their respective projects,** that the regional and provincial medical staffing plans give greater consideration to the UHCs' need for top specialists and, above all, that a formal agreement be reached on a practice plan for physicians practising at the CHUM and the MUHC. A practice plan is an arrangement whereby physicians practising within a university hospital centre agree on a method for sharing the revenues generated by their professional activities within the UHC (clinical activities, teaching and research). Research and teaching activities are generally compensated according to a lower scale than clinical activities. Moreover, the teaching and research missions of the UHCs naturally tend to slow the pace of clinical activity, which is remunerated on a fee-for-service basis. As a result, it may not be to the financial advantage of a medical specialist to practise in a university hospital centre rather than another type of institution if there is no appropriate practice plan in place.

The Commission believes that **the establishment of a practice plan is an important condition for the success of both projects.** It is therefore recommending that the matter of practice plans be settled before bids are solicited for the construction of the new facilities so that the Government does not engage in an irreversible process without first obtaining assurances that the necessary steps have been taken to attract and retain top-flight specialists for the UHCs.

The enhancement of academic medicine in a context of scarce resources that must be put to optimal use also requires the elimination of costly duplication and the pooling of certain resources. At the Commission's request, the UHCs submitted a draft agreement to the Commission at the beginning of April, setting out a method for achieving greater complementarity for certain of their activities. The Commission is in favour of this proposal but recommends that **the CHUM and the MUHC enter into a formal full and detailed complementarity agreement,** primarily for the following care and services:

- tertiary and quaternary services, particularly those affecting small numbers of patients, for whom a single combined program would be appropriate;
- diagnostic services (activities and equipment);
- administrative and support services.

Such an agreement should provide, for each such service, the results to be achieved in terms of complementarity as well as a timetable for implementation. The Commission also recommends that the savings generated by pooling resources, eliminating duplication and achieving complementarity be retained by the UHCs and that a similar exercise to eliminate duplication be conducted by both UHCs within their respective integrated university health networks (RUIS).

The capital budget set by the Government of Québec for each UHC consists of a maximum of $800 million to be provided by the Government of Québec and at least $200 million to be provided by the foundations, the private sector and the federal government.

For both UHCs, the Commission has assumed that the federal government contribution, which each UHC estimates at a further $100 million, will be forthcoming, although the consultations held by the Commission suggest that this funding may be uncertain. The CHUM already forecasts that the cost of its project will exceed this ceiling by almost $150 million. The Commission believes, however, that the estimated cost of the CHUM project will exceed the CHUM's projected funding by over $490 million. For its part, the MUHC does not anticipate any budget overrun, but the Commission estimates that the MUHC project is likely to cost about $265 million more than the projected funding. The Commission is therefore recommending **that each UHC review its project design so that it fits within the resource envelope and to this end that it consider the possibility of significantly reducing the number of beds in the new hospital and increasing the number of beds at the complementary downtown site as well as seeking further assistance from the federal government, the foundations and the private sector**. For the CHUM, that could translate into a reduction in the size of the new hospital from 700 beds to 500-550 beds and a corresponding increase in the number of beds at Hôpital Saint-Luc or Hôpital Notre-Dame (depending on whether the decision is made to build the new hospital at 6000 Saint-Denis Street or 1000 Saint-Denis Street). For the MUHC, the same process could represent a reduction of the current 608-bed project for the new hospital by 50-100 beds and a corresponding increase in the number of beds at the Montreal General Hospital.

The Commission is very concerned about the risks associated with cost overruns. Other Canadian provinces and a number of other Western countries have entered into public-private partnerships ("PPPs") in order to share some of the costs of design and construction of new hospitals with the private sector, which is frequently better able to manage such risks. The private sector also has more flexibility, which would allow it to adapt to technological change during the life cycle of the new facilities. Using public-private partnerships for all or part of the projects would not mean privatizing health care, which would remain the responsibility of public institutions. Only non-clinical aspects (such as design, construction and post-construction maintenance of the new facilities) would be undertaken by public-private partnerships and, as is the case in other jurisdictions, the new facilities would continue to be publicly owned.

Although at this point in the two projects it is still too early to make a comparative analysis of the cost of execution by the conventional method versus public-private partnerships, it is our view that a serious analysis of the advisability of completing all or some of the non-clinical aspects of the CHUM and MUHC projects in the form of PPPs is quite simply essential. Therefore, the Commission is recommending that both institutions **examine, together with other alternatives, the use of public-private partnerships to perform appropriate non-clinical activities at a lower cost** and that they justify their eventual choice of method.

The budget framework established by the Government of Québec also provides that both projects must be executed without increasing current operating budgets. The Commission believes that overruns are inevitable with operating budgets at their existing levels, particularly if both UHCs are asked to emphasize the provision of highly specialized services (which are more costly) and to establish a practice plan to provide for appropriate compensation of specialists. Operating costs would rise by $100 million to $125 million per annum in the case of the CHUM and by $50 million to $65 million per annum in the case of the MUHC. The UHCs should therefore make an effort to bring their operating costs closer into line with the Government's figures. However, such efforts should not be to the detriment of the objective of concentrating highly specialized services within the UHCs. The Commission is therefore recommending that the UHCs be given a **specific incentive-based budget for highly specialized care** and that the resource envelope for this care be separately identified so that it is not affected by budget cuts that the UHCs may have to make. be offered by the UHCs at a lower cost outside of the UHCs.

The Commission is also recommending that support be given to the **development of the associated medical clinics** proposed by the Clair Commission in order to offer certain clinical services that do not need to be offered by the UHCs at a lower cost outside of the UHCs.

The Commission also considered the sites proposed by the UHCs for their new facilities and the maintenance of a downtown hospital to offer complementary services to the public. It quickly became apparent to the Commission that some of the buildings of both UHCs are obsolete (some parts date back to the late 19th or early 20th century) and do not meet the requirements of 21st century medicine..

The CHUM project provides for the construction of a new 700-bed hospital that would bring together all university hospital activities at 6000 Saint-Denis Street and would see Hôpital Saint-Luc used as a complementary downtown general and specialized hospital centre ("CHSGS") with at least 300 beds. The CHUM specifies in its proposal that it does not wish to manage the downtown CHSGS. In addition, the CHUM's principal proposal would treat Hôtel-Dieu de Montréal and Hôpital Notre-Dame as surplus space. At the request of the Minister of Health and Social Services (the "Minister"), the CHUM submitted an alternate scenario that would make the 1000 Saint-Denis Street site (i.e., the current Hôpital Saint-Luc site plus some adjacent land) the only site for the new CHUM and would convert Hôpital Notre-Dame into a downtown CHSGS. According to this scenario, Hôtel-Dieu de Montréal would still be considered surplus space.

The Commission has concluded that **6000 Saint-Denis Street is not a desirable site for the construction of the CHUM's new facilities.** The distance of the site from hotel facilities and from major arteries (it can only be reached from the south and west by taking side streets) and the relative difficulty of reaching it by public transit (only the Rosemont metro station is really nearby) render it unsuitable for the CHUM's supraregional mission. Despite the commendable efforts of the designers of the preliminary architectural plans submitted by the CHUM, the new CHUM at 6000 Saint-Denis Street would probably give the impression of a massive and disproportionate building being parachuted into the middle of a residential area. Far from being integrated into the urban fabric, the high density of such an institution and the volume of activity it would generate would be likely to cause heavy traffic in the surrounding residential area; the hospital could thus become an undesirable neighbour. Moreover, the attraction of a new hospital for the area's residents would put further pressure on the CHUM, whose mission is to concentrate on highly specialized services, to use its beds and other resources for general and specialized services, thereby threatening the survival of the CHSGS Jean-Talon, whose mission is to provide just such general and specialized services.

Contrary to the alternate site at 1000 Saint-Denis Street, the 6000 Saint-Denis Street site is not in a neighbourhood already suited for institutions of higher learning and its presence would be of limited local benefit. The 6000 Saint-Denis Street site also offers little opportunity for expansion and raises significant safety issues related to the busy Canadian Pacific railway tracks nearby. Finally, the implementation project of the new CHUM at 6000 Saint-Denis Street would involve costs, currently estimated to be at least $122 million, for the acquisition and decontamination of the land, in addition to substantial costs for the construction of a pedestrian link to the Rosemont metro station, the improvement of the surrounding road infrastructure and all or part of the cost of demolishing the Van Horne overpass. These costs could be avoided altogether or substantially reduced by opting for the alternate scenario at 1000 Saint-Denis Street, where the CHUM already owns most of the land in question. Furthermore, the CHUM's proposal to build the new hospital at 6000 Saint-Denis Street would relegate Hôpital Notre-Dame to the status of surplus space, resulting not only in an adverse impact on the urban fabric, but also in the loss of the benefit of major investments, which continued to be made in the latter hospital until quite recently.

The Commission has **a marked preference for the alternate site at 1000 Saint-Denis Street** for the construction of the new CHUM facilities. The accessibility of the site is admirably suited to the supraregional mission of the CHUM. It is a stimulating urban location that is ideal for an institution of higher learning, with UQÀM and the Grande Bibliothèque to the north, the Palais des Congrès to the south, Radio-Canada to the east and the downtown core with its hotel facilities to the west. The 1000 Saint-Denis Street site offers reasonable opportunities for expansion and does not raise safety issues of the same order as the Canadian Pacific railway tracks running close by the 6000 Saint-Denis Street site. The proximity of the 1000 Saint-Denis Street site to the Glen site, which has been selected by the MUHC, would make for ease of movement between the two UHCs and would give a boost to complementarity between the CHUM and the MUHC. The 1000 Saint-Denis Street scenario also means that Hôpital Notre-Dame would be the complementary downtown site, thus representing a better use of existing CHUM facilities.

The MUHC is proposing a single site for the construction of its new facilities: the Glen Yards near the Vendôme intermodal station. According to the MUHC project, the Montreal General Hospital would serve as the complementary downtown hospital. The Commission considers that the sites proposed by the MUHC are perfectly adequate and recommends that t**he new MUHC hospital be built on the Glen site,** provided that access roads are built to make the site easier to reach.

Finally, the Commission considered the question of execution of the projects and the reuse of surplus sites. With regard to the execution of the projects, the Commission is of the opinion that strict cost control and coordinated construction management are necessary. Coordinated construction management would offer many benefits both for the Government and Québec taxpayers and for the UHCs themselves. Among such benefits would be the maximization of economies of scale, the reduction of inflationary effects associated with the simultaneous construction of two major hospitals in Montréal and possibly the maximization of the Québec content of the projects. The Commission is therefore recommending that, as regards the execution of the projects, **a single management corporation be created for both UHCs** to be financed from the funds earmarked for the planning and execution of the projects. The role of such a management corporation would essentially be to ensure that budgets and timetables are respected, that the work is synchronized, that economies of scale and Québec content are maximized and that the physical facilities of the two UHCs are complementary.

With respect to the reuse of surplus buildings, the Commission notes that this aspect of both UHC projects has of necessity not been dealt with in great depth as yet. The Commission is recommending, however, that the UHCs, the Agence de développement des réseaux locaux de santé et de services sociaux de Montréal (the "Agency") and the Ministère de la Santé et des Services sociaux (the "MSSS") jointly plan for the reuse of surplus property and that, in doing so, **priority be given first to public health needs and then to the needs of Montréal's universities.** In order to minimize or altogether eliminate costs associated with the maintenance of empty buildings, the Commission is also recommending that this process start as soon as possible and certainly as soon as the parameters for execution of the new UHC buildings have been finalized. The Commission is recommending that any surplus property not kept for public health purposes or for the universities be disposed of as quickly as possible in order to maximize its value.

2

Commission Mandate, Timetable and Methodology

2. COMMISSION MANDATE, TIMETABLE AND METHODOLOGY

2.1 SCOPE OF THE MANDATE

On October 29, 2003, the Government of Québec formed the Commission d'analyse des projets d'implantation du Centre hospitalier de l'Université de Montréal et du Centre universitaire de santé McGill, co-chaired by Mr. Daniel Johnson and Mr. Brian Mulroney and supported by Commission Secretary Marcel Villeneuve[2].

Its mission is to analyze and evaluate the implementation projects of the Centre hospitalier de l'Université de Montréal (CHUM) and the McGill University Health Centre (MUHC) submitted to the Minister in mid-December and to make recommendations to the Minister as to their acceptability.

According to Order in Council 1147-2003 and certain clarifications conveyed by the Minister, the Commission's work must address the following elements:

- the contribution of each project to the enhancement of academic medicine by concentrating the activities of the CHUM and the MUHC on tertiary and quaternary care (highly specialized care) and by ensuring that each institution undertakes to implement medical practice plans;
- the complementarity between the two projects, both between the two university hospital centres (UHCs) and within their respective integrated university health networks (RUIS), with regard to service specialization, training and research, as well as infrastructure and non-clinical services;
- lthe feasibility of each project within the budget framework established by the Government of Québec, i.e., for each UHC, a maximum contribution of $800 million from the Government of Québec and at least $200 million from the foundations, the private sector and the federal government, without increasing current operating budgets;
- the impact of each project on the urban fabric and the disposal of surplus buildings; the latter element includes:
  - the manner in which each institution intends to dispose of its surplus buildings; and
  - the revenues and costs associated with this operation;
- lthe coordinated execution of both projects, in order to reduce inflationary effects on the construction market as well as adverse effects on the road network and infrastructure, in addition to optimizing the personnel's adaptation to new technology.

Moreover, the Commission must ensure compliance with the parameters and conditions established by the Government and communicated by the Minister to the CHUM and the MUHC on July 21, 2003.

2 *Order in Council 1147-2003.*

These parameters and conditions include the following:

- each UHC shall maintain a non-university hospital, affiliated university centre or secondary downtown site;
- the number of beds for general and specialized care shall not exceed:
  - 1,000 beds for the CHUM (including beds in the complementary downtown hospital); and
  - 832 beds for the MUHC (including beds in the complementary downtown hospital and pediatric beds);
- in terms of fixed assets, the budget framework mentioned above includes all expenses normally considered by government authorities to be capitalizable, such as:
  - construction costs;
  - professional fees;
  - contingent administrative expenses;
  - furniture;
  - equipment;
  - information technology;
  - medical technology;
  - expenses related to the land and infrastructure, i.e.:
    - land acquisition;
    - site decontamination;
    - expropriation of buildings and businesses as well as occupant relocations;
    - cost of surrounding road infrastructure (excluding other road infrastructure costs);
  - renovations to one of the current sites in order to maintain a complementary downtown hospital.

The budget framework also includes the budgets approved by the Minister for the operating costs of the two development corporations (SICHUM and MUHC-DC), as well as for the studies undertaken or commissioned by these corporations.

2.2 TIMETABLE

The CHUM and MUHC projects were submitted to the Minister and subsequently presented to the Commission in mid-December 2003, in compliance with the Minister's request in July 2003.

In January 2004, the Commission identified several important issues requiring further clarifications in the UHC projects; the Commission also noted the virtually complete absence of complementarity between the two projects. As a result, on January 20, 2004, the Commission wrote to the chairs of the boards of directors of both UHCs to request further clarifications as well as a joint written proposal regarding complementarity, to be submitted as soon as possible.

The clarifications requested were provided on February 13, 2004, by the CHUM and on February 17, 2004, by the MUHC. A joint draft agreement regarding complementarity was transmitted to the Commission at the beginning of April 2004.

The Commission's deadline for completing its report was extended to April 16, 2004.

2.3 METHODOLOGY

The Commission used several sources of information in conducting its analysis.

The Commission first requested and obtained copies of all of the pertinent studies previously conducted by the Société d'implantation du CHUM ("SICHUM"), the McGill University Hospital Centre Development Corporation ("MUHC-DC") and by both institutions. Its second source of information was a series of exchanges that took place throughout the Commission's mandate with the two institutions, their faculties of medicine and the universities. Third, the Commission called upon experts to verify or analyze various aspects of the two projects in greater depth. The areas of expertise of these experts included:

- world trends in medicine and research;
- the enhancement of academic medicine;
- surface area analysis;
- cost analysis;
- concentration of highly specialized care;
- information technology;
- specialized medical equipment;
- the impact of the projects on the urban fabric;
- reuse of surplus buildings;
- cost control and management.

The Commissioners and their colleagues also met with a number of individuals who were invited to share their views on the two projects or who asked to be heard by the Commission. As some of these people came from outside Québec, the Commission benefited from geographically diverse views and experiences.

Finally, the Commission saw fit to visit the current UHC sites and their projected locations to obtain a clear vision of the elements mentioned in the reports written by the experts retained by the Commission and the institutions.

The Commissioners and their colleagues were in constant contact throughout the Commission's mandate in order to analyze, evaluate and weigh the elements that were relevant to the preparation of this report and to the recommendations contained herein.

3

Bases for the Commission's Analysis

3. BASES FOR THE COMMISSION'S ANALYSIS

Throughout the pages that follow, the Commission will analyze the CHUM and MUHC implementation projects in accordance with its mandate and in light of the parameters and conditions established by the Government of Québec. As the reader will note, we have generally followed the order in which these parameters are set out in Order in Council 1147-2003 for the purposes of this report. After presenting an overview of the main current and future trends in the health field and attempting to measure their impact on the UHCs, we will successively study the projects presented by the CHUM and the MUHC, with a view to analyzing their contribution to the enhancement of academic medicine, their complementarity, their compliance with the financial framework, the feasibility of their localizations and, finally, certain aspects of their execution, such as cost control and the reuse of surplus buildings.

Before beginning our actual analysis, we will briefly review its underlying principles, which have guided the Commission throughout its mandate

3.1 A FAIR, RIGOROUS AND THOROUGH ANALYSIS

The Commission has endeavoured to be fair, rigorous and thorough in its analysis. Given the long and sometimes difficult advancement of the two projects and the significant commitment of resources and effort thus far, it is inevitable that some recommendations will not be unanimously accepted. Insofar as these recommendations address the greatest interests of the population of Québec and are based on a fair and rigorous analysis, the Commission did not restrain itself in making them.

3.2 A PATIENT-CENTRED APPROACH AND THE SPECIAL MISSION OF UHCS

University hospital centres are not ordinary health institutions. According to the Act respecting health services and social services (R.S.Q., chapter S-4.2) (the "ARHSSS") and ministerial policies, their mission includes:

- offering an excellent quality of health care to the public with a particular emphasis on highly specialized care in several medical specialties;
- playing a leading role in teaching medicine and certain other disciplines in the health sector;
- pursuing research activities in order to keep Québec medicine on the cutting edge of scientific discoveries in the health field and to enhance its capacity for innovation; and
- évaluer les nouvelles technologies dans le domaine de la santé.

University hospital centres also act as points of reference for the rest of the health care network, particularly for highly specialized care.

All of these UHC activities must lead towards a single objective: to provide better care to the population of Québec.

In its work, the Commission has taken into consideration the special mission of UHCs while never losing sight of the objective of this mission and adopting a patient-centred approach.

3.3 A MEANS OF ENHANCING ACADEMIC MEDICINE RATHER THAN A CONSTRUCTION PROJECT

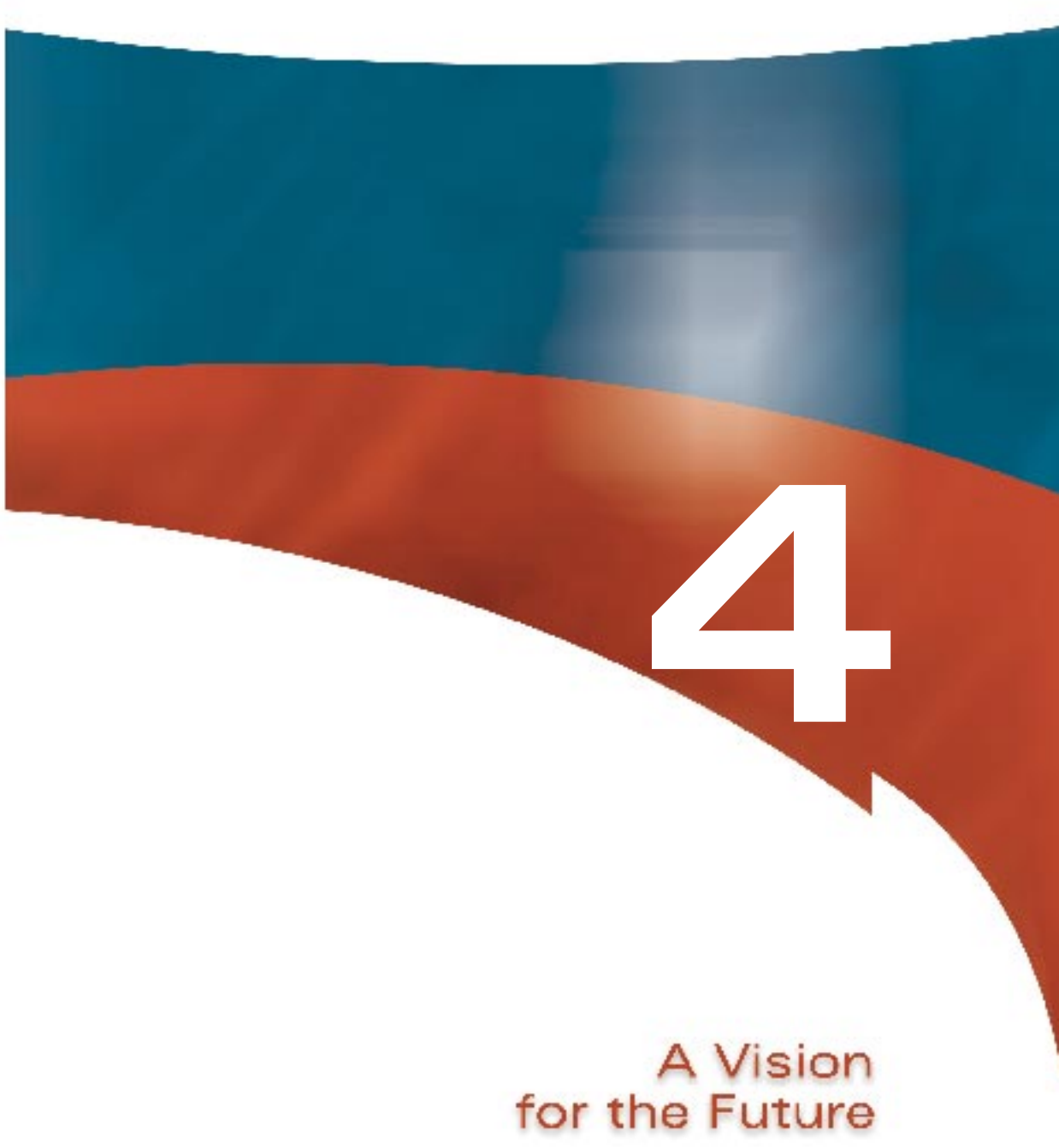
In line with the ministerial vision, the Commission views the projects submitted by the CHUM and MUHC as proposals for the enhancement of academic medicine in Montréal rather than as simple construction projects. Although there is no doubt as to the pertinence of building new facilities for both UHCs, the CHUM and MUHC projects must go far beyond that and lead towards a modernization and an improvement of the quality of academic medicine in Québec. Several recommendations of the Commission, particularly at the beginning of this report, convey this concern.

3.4 FUNDING CAPACITY

The CHUM and MUHC projects require a substantial investment on the part of the Government of Québec, which necessarily implies that Québec taxpayers are the main financial backers for these projects. However, the capacity of Québec taxpayers to finance the projects is limited. Moreover, the funds devoted to these projects will obviously not be available for the rest of the health care network. The Commission therefore wanted to be assured that every dollar invested by the Government in these projects would be spent responsibly and optimally.

3.5 A FORWARD-LOOKING ANALYSIS

The CHUM and MUHC projects will have an impact on Québec medicine and research far beyond 2010, the date currently anticipated for the completion of the construction of the new facilities. The Commission gathered information about world trends and developments expected in the health sector, and it took these into account in its analysis. Additionally, while keeping in tune with current and past realities, the Commission chose to look beyond these and to base its analysis on a long-term vision of the two projects.



4

A Vision for the Future

4. A VISION FOR THE FUTURE

The building of two new university hospital centres represents a unique opportunity in North America, as does the fact that Montréal is home to two reputed faculties of medicine, stemming from two cultures, as well as two university networks within which these faculties operate. This opportunity must be seized to give the entire province of Québec exceptional added value as compared to the current situation. The design of the two projects must enable the CHUM and the MUHC to meet the needs of the population for the next 50 to 75 years. This requires a thorough understanding of the major trends that will most likely influence how disease is prevented, treated and cured, as well as an assessment of the probable impact of these trends on the UHCs.

4.1 SIGNIFICANT CHANGES TO HEALTH CARE

4.1.1 A RAPIDLY AGING POPULATION

From 1996 to 2025, the percentage of individuals in Québec over 65 will rise from 12% to 24%. This significant demographic change will have inevitable consequences on the organization of clinical services offered to patients. The accelerated aging of the population added to the "chronicizing" of disease allow us to anticipate a major impact on the use of medical, hospital and pharmaceutical services. Chronic diseases are not cured: they are treated with increasing success and for longer periods of time, which results in greater patient longevity and quality of life. They are complex diseases that require a greater volume, intensity and variety of services, which are therefore more costly and are generally offered by a number of different specialists.

The Commission is issuing recommendations that take these serious trends into account in sections 5.5 ("Concentration of Highly Specialized Care") and 7.3 ("Operating Costs: Inevitable Overruns").

4.1.2 ACCELERATED TECHNOLOGICAL DEVELOPMENT

The accelerated pace of technological development is an overriding factor in the evolution of health care. The influence of technology has greatly increased over the last 10 years, and a look at the future gives us a glimpse of an even faster pace.

Applied to university teaching hospitals, these technological developments favour the introduction of new drugs, equipment and care practices that improve diagnostic and therapeutic services. They also enable faster access to and better dissemination of information and knowledge, thus facilitating better professional practices (through electronic patient files, integrated clinical information systems, clinical decision support systems, telemedicine, etc.). With respect to research, genomics and proteomics benefit from bioinformatics and the increased potential for organizing, managing and analyzing the huge amounts of information generated by these cutting-edge research fields.

These new technologies and modes of intervention are extremely costly to acquire or to develop, maintain, operate and upgrade, which makes their introduction and widespread use difficult. We must therefore concentrate the development of innovations and the location of the most expensive technological infrastructure, with respect to both highly specialized care and research.

The Commission believes that the complementarity between the UHCs and the various health care institutions is one of the best ways to curb the dramatic increase in health costs related to rapid technological development. We examine this further in chapter 6 ("Complementarity").

4.1.3 EVER INCREASING COSTS

An increase in health expenditures will inevitably flow from the factors that we have set out above. The health care and social services program in Québec represents over 40% of government program spending in this province. Regardless of whether health care is publicly or privately funded, the significant increase in health expenditures is worrisome and leads payers, patient groups, businesses and governments to demand more efficiency in health care delivery.

The Commission has attempted to responsibly reconcile this trend with the objective of enhancing academic medicine while taking into account the limited funding capacity of the Government of Québec. The recommendations formulated by the Commission, particularly as found in chapters 6 ("Complementarity"), 7 ("Financial Framework") and 9 ("Project Execution: Cost Control and Management"), reflect this approach.

4.2 MAJOR IMPACT ON UHCS

For the UHCs to be able to fulfill their mission properly, several challenges will have to be met. The following subsections represent an overview of these challenges:

4.2.1 FLEXIBILITY AND ADAPTABILITY

Flexibility and adaptability are major concerns that should be addressed in the design of the new CHUM and MUHC facilities. As mentioned previously, the pace of progress and technological development in the health care field is very rapid. As we plan these facilities, many new pieces of specialized medical equipment have yet to be invented that will certainly need to be integrated into the new UHCs. Who would accept that a new UHC be obsolete on the very day that it opens?

Moreover, the emergence of new infectious diseases (SARS, for example, is still fresh in our memory) requires special measures in the design of the new UHCs, reflected, for example, in the quality of the ventilation system, the availability of adequate isolation rooms and the possibility that measures of containment and asepsis will be needed.

4.2.2 INTEGRATION WITHIN THE HEALTH CARE NETWORK

The roles of major health care institutions are changing. For example, patients are no longer hospitalized for pre-operative tests, nor do they remain in the hospital to convalesce after surgery. Short-term hospitals are increasingly reserved for procedures requiring a substantial technical platform. Many procedures that required hospitalization in the past are now offered on an outpatient basis in non-hospital settings. This phenomenon will only increase with technological advances.

In Québec, in accordance with the Act respecting local health and social services network development agencies (S.Q. 2003, c. 21), it is local health and social services networks that will act as an organized first line in primary care: CLSCs and homecare, community hospitals, doctors' offices, family medicine groups and residential and long-term care centres ("CHSLDs").

The corollary of a well-organized first line providing primary care is the establishment of formal links and service corridors between the first line and the regional and university hospitals for specialized and highly specialized services. In Québec, the Minister has mandated the integrated university health networks (RUIS) to enter into agreements with the local networks and regional agencies so that specialized and highly specialized services will be accessible throughout the province.

The implementation of the RUIS ensures that the UHCs do not work in isolation from other health care providers. The RUIS could also encourage the concentration of highly specialized care in UHCs. With respect to clinical care, UHC managers and clinicians will have to work in close partnership with their colleagues who offer pre- and post-hospitalization care at the local or regional level as well as at the provincial level.

With respect to teaching, this trend means that UHCs are no longer the only training site for health professionals since patients are only in hospitals for short periods of time. Training must also be offered at the other sites where patients are treated: in family medicine groups, in CLSCs, at home and in CHSLDs. This points to the need for a network of university-level training sites and for formal links between UHCs, other hospitals on the same territory, CLSCs, doctors' offices, etc. While assuming a leadership role within the RUIS in collaboration with the faculties of medicine, UHCs will have to take into account the academic activities of affiliated university centres ("AUCs") and university institutes ("UIs").

4.2.3 INTER-UHC AND INTER-UNIVERSITY PARTNERSHIPS

The complexity, effort and costs associated with introducing new health care technology, developing certain superspecialties and establishing major research infrastructure make it increasingly necessary for UHCs and universities to collaborate as partners.

This partnership may mean pooling certain resources and expertise or sharing superspecialties, research fields or teaching programs. UHCs and universities, especially in a city the size of Montréal, can no longer offer everything independently of each other.

This concern is shared by the rectors of Québec universities. In the January 2004 issue of Forces magazine, in an article entitled "Future Trends," both the rector of Université de Montréal and the principal of McGill University insisted upon the need for a new way of governing and managing universities and for interuniversity complementarity. This article eloquently underlines how important it is for universities to make choices, particularly by concentrating their resources in their own areas of excellence.

In addition, one of the major challenges faced by UHCs is increasing international competition for limited resources. This competition will not be felt between CHUM-Université de Montréal and MUHC-McGill University, but rather between the university teaching poles of Montréal and those of Toronto, Boston, Los Angeles, London and Paris.

Finally, the challenges faced by current and future research will require a better deployment of resources. The field of genomics is a perfect example. This important and innovative field can improve our ability to prevent, diagnose and treat disease; however, it requires major infrastructure and can only be developed by pooling expertise and resources at national and international levels.

4.2.4 APPROPRIATE COMPENSATION FOR PHYSICIANS' ACADEMIC FUNCTIONS

If we want to recruit and retain the best clinicians, professors and researchers, we must offer them an attractive pay package; however, it is especially important that teaching, research and assessment activities be compensated fairly in comparison to clinical activities. This is the role of the medical practice plan, which offers UHC physicians financial incentives based on teaching, research, clinical and assessment objectives. In the United States, the largest UHCs have practice plans that cover all physicians and all of their activities in full teaching hospitals. These hospitals are often affiliated with other hospitals, which either participate in some university teaching or are community hospitals, where physicians who are not involved in teaching can devote their careers to treating patients and be remunerated on a fee-for-service basis. The Ontario Ministry of Health and Long-Term Care is currently negotiating the implementation of practice plans (known as Alternative Funding Plans) in academic health science centres in Toronto, Hamilton, London and Ottawa, based on the one already established in Kingston.

It should be noted that original clinical research in teaching hospitals is vulnerable in most Western countries. Clinician-researchers who work in hospitals often feel demotivated because of the pressures on them to see patients, compensation issues, the lack of commitment on the part of hospital administration and the lack of logistical support and supervision. Clinical research commissioned by pharmaceutical companies is often more attractive. Private preclinical and clinical research companies (Contract Research Organizations) have developed in the United States, Canada and Europe, in collaboration with the biopharmaceutical industry. In certain cases, they are competing with UHCs to recruit the best researchers.

We will address these issues in greater depth in section 5.6 ("Human Resources and Medical Practice Plans").

4.2.5 APPROPRIATE FUNDING FOR UHCS' ACADEMIC FUNCTION

UHCs and universities as well as the relevant ministries and granting councils are under pressure to identify the direct and indirect costs of teaching, research and health technology assessment, in order to differentiate these functions from the clinical care component. On a more global level, we must also decide who will fund each of the components of the university mission and at what level.

As a corollary, if we want to justify the additional costs of a UHC compared to a non-university hospital, we must identify and document not only these costs but also the benefits of the specific social and economic contributions of UHCs.

The Commission addresses these issues in section 7.3 ("Operating Costs: Inevitable Overruns").

5

Enhancement of Academic Medicine

Report of the Commission d'analyse des projets d'implantation du Centre hospitalier de l'Université de Montréal et du Centre universitaire de santé McGill

April 2004

5. ENHANCEMENT OF ACADEMIC MEDICINE

Part of the mandate of the Commission is to analyze and evaluate each UHC project with regard to its contribution to the enhancement of academic medicine. The Minister established two criteria for a more detailed analysis, namely, that each institution concentrate on tertiary and quaternary activities (highly specialized care) and that each institution undertake to implement a medical practice plan.

5.1 UHC LEADERSHIP AND THE ENHANCEMENT OF ACADEMIC MEDICINE

The main purpose of the proposals submitted by the CHUM and the MUHC to the MSSS in December 2003 was to present a development concept for the physical facilities as part of their respective implementation projects. Nevertheless, the proposals include certain elements associated with the development of academic medicine, such as practice plans, the need for resource concentration, reaching a critical mass of residents, the dynamic between research and innovation, and the recognition of the network of academic medicine.

The Commission wants to examine these issues in greater depth and analyze certain criteria that the UHCs must meet in order to significantly contribute to the enhancement of academic medicine.

5.2 ACADEMIC MEDICINE AND ITS ENVIRONMENT: AN EVOLVING CONTEXT

Academic medicine can be defined as:

[Translation]

[. . .] the practice of medicine associated with the generation and transfer of knowledge as well as with the development of skills and techniques specific to the enhancement of medicine. Academic medicine thus has three focusses: teaching, research and clinical care, and its key feature is a dual requirement for excellence and innovation. The quest for excellence and innovation is based upon a strong synergy between its three missions of teaching, research and clinical care. This quest is deployed in all medical fields, from prevention to the most highly specialized care, starting with first-line and palliative care [. . .] [3]

Academic medicine evolves in an environment that is in constant flux, notably as a result of advances in basic science and health and information technology, as well as demographic changes.

The Commission also notes that, according to the experts, future advances will lead to a major transformation of the organization of health care processes, their coordination and the means of communication between professionals.

[3] Champagne, A.P. Contandriopoulos et al. *Les Enjeux du développement de la médecine académique,* Montréal: Department of Health Administration and Groupe de recherché interdisciplinaire en santé, Faculty of Medicine, Université de Montréal, 2004, p. 7.

5.3 UHCS AND THEIR MISSION: CLINICAL CARE, TEACHING AND RESEARCH

According to the ARHSSS, UHCs have four missions, namely teaching, research, clinical care and health technology assessment. The latter is often assimilated as a form of research.

UHCs must provide a proper environment to support all of the missions of academic medicine. With respect to research, this means that UHCs must be able to develop, test, refine and improve health care processes. With respect to training health professionals, this requires, among other things, ready access to scientific data and a UHC organizational system that facilitates the integration and use of new technology and cutting-edge specialized services. UHCs must also make sure that their patients receive the appropriate care in the right location and that students are exposed to modern clinical environments.

5.3.1 CLINICAL CARE

UHCs must maintain and promote the highest standards of excellence when dispensing health care to the public; to do so, they must remain at the forefront of scientific and technological developments. They must also provide care to a significant proportion of individuals suffering from serious or rare diseases or having unusual conditions. Moreover, they must provide highly specialized care and special diagnostic services. Finally, a significant proportion of their patients will be transfers from other hospitals or institutions.

5.3.2 TEACHING: THE UNIVERSITY ENVIRONMENT AND INTERNSHIPS

Several trends lead towards a restructuring of the medical practice around the nucleus of outpatient services, thereby hospitals are turned into a spoke of the health care network rather than its hub. To come to terms with this evolution, health care institutions offering academic training have tended to become more diverse. Today, UHCs are not the only health care institutions with an academic vocation of clinical care, teaching and research.

Three types of health care institutions have been designated by the ARHSSS as having academic vocations: university hospital centres (UHCs), university institutes (UIs) and affiliated university centres (AUCs). The main distinction that the ARHSSS establishes between these institutions is that UHCs offer services and teaching in several medical disciplines and have a broad research area, whereas UIs specialize in a particular sector with respect to clinical care as well as teaching and research. Finally, AUCs participate in the training of health professionals or in research activities in addition to their main activities, which are not academic in nature.

Thus, UHCs occupy a central position in academic medicine. To fulfill their role properly, they must offer support to and work closely with other health care institutions and universities, sharing with them teaching and research missions.

5.3.3 RESEARCH

University research tends to be conducted in research centres where there is a sufficient critical mass of researchers from a variety of backgrounds to ensure an optimal level of efficiency, flexibility, quality and impact. These centres also aim to reach a critical mass of patients, thereby ensuring that quality clinical research can be conducted. They also tend to be organized around broad themes within which basic and applied research is developed. Research centres thus become ideal locations for interdisciplinary fertilization and the frequent reconfiguration of research teams based on the problems to be solved. These teams' capacity for response is impressive and tends to confirm the value of this model. Finally, these centres have major research infrastructure and their researchers must have an impact at the local, regional, national and international levels.

5.3.4 MANAGEMENT

The management structure of UHCs should reflect and integrate their various missions. A preferred way of achieving this objective would be to ensure that all UHC medical personnel participate in clinical, teaching and research activities; these activities could, however, be exercised in varying proportions and conditions. In this way, UHCs would benefit from management that is better adapted to the requirements of their various missions.

5.3.5 INNOVATION

UHCs have a major role to play in the renewal of care and teaching practices. The Commission underscores the potential of UHCs in promoting Montréal and the province of Québec as leaders in the fields of knowledge, clinical research and development, and health science technology assessment. The two UHC projects are thus instruments to support innovation.

5.4 A MEASURE OF EXCELLENCE AND OF THE ENHANCEMENT OF ACADEMIC MEDICINE

The Commission notes that different regulatory agencies are responsible for the various missions of UHCs. However, there is no existing performance assessment system established to assess the overall level of excellence of academic medicine and to set objectives to maintain and enhance the UHCs. In fact, none of the regulatory agencies measures the overall performance of UHCs and none has the mandate to do so. Among all of the assessment, accreditation and monitoring mechanisms established by these regulatory agencies, the overall excellence of academic medicine is not considered in any integrated fashion. The Commission also notes that neither of the UHCs has formulated specific objectives regarding the enhancement of academic medicine.

The Commission believes that the CHUM and the MUHC should expand their projects with respect to the enhancement of academic medicine, specifically by defining more clearly the goals that they expect to be achieved in this regard once the new facilities open.

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R1. That all UHC medical personnel participate in clinical, teaching and research activities, to be exercised in accordance with variable proportions and conditions of given individuals;

R2. That the UHCs further develop their project to enhance academic medicine based on excellence and innovation in the following five spheres:

- clinical care;
- teaching;
- research;
- medical health technology assessment;
- management;

R3. That the UHCs define more clearly the goals to be achieved once the new facilities open as regards the enhancement of academic medicine.

Following this overview of academic medicine, the Commission will now examine the two criteria established by the Minister for a more detailed analysis of the contribution of these projects to the enhancement of academic medicine, namely that, first, each UHC concentrate on tertiary and quaternary activities (highly specialized care) and that, second, each undertake to implement a medical practice plan.

5.5 CONCENTRATION OF HIGHLY SPECIALIZED CARE

The concentration of tertiary and quaternary activities (or highly specialized care) is part of the process of establishing a hierarchy of medical services in hospitals. Within the RUIS framework, the MSSS intends for hospital institutions to share the three surpraregional, regional and local missions as follows:

[Translation]

The supraregional mission is characterized by an offer of services that consist mostly of highly specialized care in a context of specialized and superspecialized training activities: academic programming, a research centre with career researchers and procedures to assess new technology.

The regional mission is defined by an offer of services that are principally specialized, in a context of basic and specialized training and research activities.

The local mission is expressed by an offer of services of general proximity care, which are occasionally specialized, and by a context of basic training activities.

Normally, UHCs, affiliated university hospital centres (AUHCs) and UIs include all three missions.

Although UHCs cover a vast geographical territory for the purpose of their supraregional mission, their regional clientele is solely regional and their local clientele includes only those who live in the immediate proximity of the UHC. UHCs, by their force of attraction, tend to confuse these missions and to congest their centres with patients who are not their own. This hinders their actual mission and diverts patients away from the local and regional services they should be using.[4]

Highly specialized care, also called level III and IV care or tertiary and quaternary care, is characterized by services that:

- generally require sophisticated facilities as well as equipment that is costly and on the cutting edge of technology;
- involve a limited number of highly specialized medical personnel who are also involved in research and teaching;
- also require highly specialized non-medical personnel;
- generally treat elective and transfer cases;
- need a critical mass of patients to maintain the expertise of health care providers;
- are usually associated with high operating costs.

Highly specialized care includes care for serious injuries and burns, pediatric surgery, neurosurgery, cardiovascular and thoracic surgery, organ transplants, oncology diagnosis and treatment, high-risk childbirth and treatment of AIDS patients.

Highly specialized care represents about 6% of hospitalizations in Québec, a proportion that has not changed significantly since 1999 (Appendix 2).

Eleven (11) hospital centres treat 87% of highly specialized cases in Québec. Of these, the CHUM and the MUHC treated 10.6% and 12.5% of all highly specialized cases in 2002, respectively. The highly specialized activities of both UHCs have been decreasing over the past four years. The CHUM went from treating 11.4% of cases in 1999 to 10.6% in 2002; during the same period, the MUHC's proportion fell from 14% to 12.5% (Appendix 3).

4 *Direction générale des affaires médicales et académiques, Hiérarchisation des services médicaux de type hospitalier, Énoncé de position ministérielle (working document), MSSS, September 8, 2003.*

Since the need for highly specialized care increases with age, the aging of the population will lead to an increased demand for this type of care. However, the UHCs have not projected demand for this type of care beyond 2010.

The Commission therefore forecast this demand until 2021, the tenth year of the foreseen operation of the new UHCs, by maintaining the proportion of highly specialized care in Québec dispensed by each UHC, being 10.6% for the CHUM and 12.5% for the MUHC.

TABLE 1: PROJECTED NUMBER OF BEDS FOR HIGHLY SPECIALIZED CARE

	Proposition of the Commission as to the projected number of beds for highly specialized care	
Years	2010	2021
CHUM	175	255
MUHC	142	186

This projection suggests that the CHUM should increase its number of beds from the current 147 to 175 in 2010 (as forecast by the CHUM) and to 255 in 2021; for the MUHC, the number of beds should increase from the current 120 to 142 in 2010 (rather than the status quo of 120 suggested by the MUHC) and to 186 in 2021. This does not take into account the increases assumed by the MSSS position statement, which calls for an increased concentration of such highly specialized services.

However, technological, clinical and pharmaceutical advances as well as research can significantly influence the way health care is provided, especially as far as highly specialized services are concerned. As the precise evolution of demand is difficult to predict over the long term, it is appropriate for both UHCs to design their projects with as much flexibility as possible, as mentioned previously, in order to be able to adapt to the reality and needs of the population as time evolves.

In the short- and medium-term, however, the CHUM and the MUHC must reverse the trend towards decreasing their highly specialized care. In order to ensure the concentration of tertiary and quaternary services as required by the Government's guidelines, the MSSS should establish a series of measures, on the one hand, to facilitate and simplify the recruitment of highly specialized medical personnel and, on the other hand, to favour a greater concentration of highly specialized care in the UHCs; in addition, a specific budget for this type of care should be set aside.

CONSEQUENTLY, WITH RESPECT TO THE CRITERION OF CONCENTRATING HIGHLY SPECIALIZED ACTIVITIES, THE COMMISSION RECOMMENDS:

R4. That a sufficient number of beds be provided for highly specialized care at the CHUM (175 beds in 2010) and the MUHC (142 beds in 2010) in order to respond to the increasing demand for these services due, among other things, to the aging of the population, and therefore that the number of general and specialized beds be reduced;

R5. That the number of beds for highly specialized care then be increased at the CHUM and the MUHC in order to comply with the MSSS position statement regarding highly specialized services; the UHCs, RUIS, MSSS and universities would determine the appropriate number of beds and their order;

R6. That the CHUM and the MUHC integrate as much flexibility as possible into their respective projects in order to be able to adapt over the years to the needs of the population for highly specialized care.

5.6 HUMAN RESOURCES AND MEDICAL PRACTICE PLANS

The Commission notes that the important issue of human resources has been overshadowed by the construction project for the two facilities in the proposals submitted by the UHCs. However, the success of the UHC projects rests in great part on their human resources. The execution of these two projects will obviously engender significant changes, which will inevitably create uncertainty among all hospital personnel, whether medical or non-medical, unionized or non-unionized, at all levels of these organizations and institutions. It is for this reason that the Commission recommends that the UHCs specifically consider this issue in the development of their transition plans and that they take adequate measures to mobilize and reassure all personnel involved as to the importance of their contribution in ensuring these projects are the enviable success that we expect them to be for the entire population of Québec.

The Commission also proposes that the UHCs further develop their respective projects with regard to recruiting and retaining physicians and professionals.

To fulfill their missions efficiently, Montréal's UHCs must recruit and retain top-flight physicians and researchers. As mentioned previously, the UHCs are competing against renowned institutions at the international level, particularly in the United States and the rest of Canada. Montréal offers undeniable advantages in terms of attracting, retaining and integrating talented individuals, such as a concentration of scientific and cultural activities, openness to diversity, an affordable cost of living and a thriving life sciences industry. Despite these attractions, the CHUM and the MUHC cannot hope to recruit and retain the best physicians, specialists and researchers without offering them an appropriate compensation system and career plan adapted to their clinical, teaching and research activities and the material resources commensurate with these highly complex activities.

As for the compensation system, the Commission notes that the current situation is worrisome to say the least. Physicians practising in university hospital centres, as are all physicians practising in other hospitals in Québec, are remunerated on a fee-for-service basis for their clinical activities. UHC physicians are also compensated for their teaching and research activities, though based on a lower scale. The proportion of clinical activities versus teaching and research varies from one physician to another and may change over time for the same individual. Moreover, the specialization of UHCs and their teaching and research missions naturally tend to slow the pace of clinical activity. As a result, it may not be to the financial advantage of a top-flight medical specialist to practise in a UHC rather than another type of health institution. On the one hand, this could result in a decrease in the quality of the teaching offered by UHCs, and on the other, it could lead to an inefficient fragmentation of certain highly specialized medical services. In other words, an inadequate compensation system in UHCs can favour the creation of a multitude of small teams outside UHCs, whereas a critical mass of specialists (within UHCs) would be preferable and would avoid duplication and reduce inefficiency. In this regard, it is pertinent to mention again that the CHUM and the MUHC have lost ground to other institutions in terms of highly specialized care over the last four years.

A possible solution is the use of a practice plan, which is an arrangement whereby physicians practising within a university hospital centre agree on a method for sharing the revenues generated by their professional activities within the UHC. As mentioned in subsection 4.2.4, this solution has been adopted by several American and Canadian university teaching hospitals. In Québec, physicians at the Centre hospitalier universitaire de l'Université de Sherbrooke participate in a practice plan. At present, this is not the case for physicians at the CHUM or the MUHC.

Given the primordial importance of specialized human resources to these projects, we believe that the implementation of practice plans within the CHUM and the MUHC is critical to their success. It would obviously be inappropriate to build the infrastructure proposed herein, at great cost to taxpayers, only to underuse it or use it suboptimally. Moreover, it appears necessary to us that a practice plan be implemented, at the latest, before bids are solicited for the construction of the new facilities, so that the Government does not engage in an irreversible process before this issue is resolved. In addition, according to the expert reports we have received, the Government must realistically be prepared to provide additional funding to ensure the success of these practice plans.

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R7. That the two UHCs all a central and explicit role for human resources in their respective projects with regard to all personnel affected by this important change particularly with regard to recruiting and retaining top-flight specialists and researchers;

R8. That the regional and provincial medical staffing plans give greater consideration to the UHCs' need for top medical specialists and researchers who will fulfill UHC teaching and research responsibilities;

R9. That a formal agreement regarding a practice plan be reached in each UHC at the latest before bids are solicited for the construction of the new facilities.

6

Complementarity

6. COMPLEMENTARITY

One of the guidelines imposed by the Government on the two institutions for the design and development of their projects is the need to achieve optimal complementarity between the two UHCs (inter-UHC) and within each of their respective integrated university health networks (intra-RUIS) with respect to clinical and support services, while taking into account the role of Hôpital Sainte-Justine. The purpose of this is to eliminate costly duplication and to enhance the competitiveness of the UHCs at the national and international level by requiring them to pool certain resources. From the point of view where the two UHCs are considered to be a single university teaching entity that is competing against other similar institutions internationally, the Commission also believes that the construction of new hospitals within the framework of these two projects represents a unique opportunity to create synergy between the UHCs as well as between each UHC and their partners within their respective RUIS.

The issue of complementarity will therefore be addressed on two levels, first inter-UHC complementarity and then intra-RUIS complementarity.

6.1 INTER-UHC COMPLEMENTARITY

Noting the virtually complete absence of complementarity between the two proposals submitted by the CHUM and the MUHC in December 2003, the Commission wrote to the chairs of the boards of directors of both UHCs in January 2004 to request that they submit a joint written proposal regarding complementarity as soon as possible.

The two institutions worked seriously on this issue and submitted a draft agreement regarding complementarity to the Commission at the beginning of April 2004. This draft agreement essentially provides a process for reaching a complementarity agreement for highly specialized (tertiary and quaternary) care as well as for certain administrative and support services.

The draft agreement is a step in the right direction. However, the Commission is of the opinion that a formal, full and detailed agreement, including specific complementarity goals and a timetable for their implementation must be drawn up between the two UHCs and put into practice.

The Commission has identified three priority targets for complementarity that the two UHCs should consider. The first is quaternary services, the most highly specialized services, which are used by a very limited number of patients. The Commission believes that joint programs should be developed for these services. A single medical team under the jurisdiction of both UHCs and in compliance with the training programs of both universities would optimize the efficiency and quality of the services offered to the population. This is not only true for the clinical services provided to adults, but also for those provided to children. The Commission considers that all of the quaternary services offered by the MUHC and Hôpital Sainte-Justine should be examined more closely in an effort to achieve complementarity.

Second, the diagnostic services sector and, notably, the specialized laboratories and medical equipment, could be part of a new organization based on a model of enhanced complementarity.

Third, the administrative and support services sector lends itself not only to approaches of complementarity but also to the possibility of outsourcing or public-private partnerships. The work executed for the institutions includes thirteen sectors for which one or the other of these approaches could be used: parking, power plant, major electromechanical equipment, food services, major medical equipment, laundry, information technology, pharmacy, laboratories, research centre, property management, biomedical waste management and sterilization[5]. These possibilities must be carefully examined in order to give the population the best value for their investment.

However, it is important to recognize that achieving complementarity is not an easy exercise.

Approaches of complementarity and the elimination of duplication change the way in which things are done and may, for example, have an impact on human resources. This impact must be addressed while respecting the current collective agreements. However, a planned joint approach may contribute to reducing this impact. It is also important for unions, employees and the UHCs to collaborate to ensure that objectives of complementarity are achieved and that all the individuals affected by these changes are treated fairly.

The Commission also believes that financial incentives should be provided to encourage the UHCs to strive towards complementarity. At the very least, allowing the UHCs to retain the savings generated by complementarity measures would be a step in the right direction.

6.2 INTRA-RUIS COMPLEMENTARITY

Integrated university health networks were created in December 2003 under the Act respecting local health and social services network development agencies (S. Q. 2003, c. 21) to better coordinate medical training. Four RUIS were created, one for each university having a faculty of medicine. The CHUM and the MUHC are therefore members of two different RUIS within which they must not only share teaching responsibilities but also achieve complementarity at the level of specialized and highly specialized services. The existence of the RUIS manifests the intent of the MSSS to develop greater complementarity and to eliminate unnecessary duplication.

Several elements exist to incite the two UHCs and the two universities to achieve better complementarity with their partners within their respective RUIS. First, the teaching load of the two university networks (Université de Montréal and McGill University) will increase significantly once the ceiling on the number of students admitted has been increased as planned. This additional load will exceed the capacity of the two UHCs and will have to be shared with the other institutions in their respective RUIS. For the Université de Montréal, this means that Hôpital du Sacré-Cœur de Montréal, Hôpital Maisonneuve-Rosemont and the Montreal Heart Institute will be called upon to play an even more active role in teaching; for McGill University, the same can be said of the Sir Mortimer B. Davies Jewish General Hospital and the St. Mary's Hospital Centre.

However, intra-RUIS complementarity is not limited only to teaching. Clinical services are also targets to be considered. As will be discussed later, the number of beds in each of the new hospitals should be reduced in order to comply with the budget framework. In this context, it would be appropriate for the CHUM and the MUHC to examine the specialized and highly specialized services offered in their respective RUIS in order to eliminate unnecessary duplication and to ensure an optimal deployment of resources.

[5] PricewaterhouseCoopers Securities Inc., *Revue préliminaire des possibilités de partenariats publics-privés dans le secteur de la santé,* February 2002.

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R10. That the joint proposal of the CHUM and the MUHC providing a process for reaching complementarity between them be favourably received;

R11. That the CHUM and the MUHC be asked to enter into a formal, full and detailed agreement in order to eliminate duplication and to achieve true complementarity between the two UHCs with regard to the following care and services in particular:

- ltertiary and quaternary services, particularly those affecting small numbers of patients, for whom a single combined program would be appropriate;
- diagnostic services (activities and equipment);
- administrative and support services;

Such an agreement should provide, for each such service, the results to be achieved in terms of complementarity as well as a timetable for implementation;

R12. That the specialized and highly specialized services offered by the UHCs and their partners in their respective RUIS be examined in order to eliminate unnecessary duplication and to ensure an optimal deployment of resources;

R13. That a planned joint approach be developed to manage the foreseeable impact on human resources of the complementarity agreements entered into by the UHCs;

R14. That the savings generated by pooling resources, eliminating duplication and achieving complementarity be retained by the UHCs.

7

Financial Framework

7. FINANCIAL FRAMEWORK

The financial framework imposed by the Government of Québec consists of three components: revenues, capital costs and operating costs. The dollar amounts indicated below represent the value at the first quarter of 2004 and exclude all taxes.

7.1 LEVEL OF FUNDING

The CHUM and the MUHC can each count on a maximum of $800 million from the Government of Québec to execute their projects. However, each must also receive at least $200 million from the foundations, the private sector and the federal government.

In addition to this $200 million, the two institutions anticipate that they can obtain $100 million from the federal government through the Canada Fund for Innovation (CFI). However, the CFI chooses recipients based on a grant-selection process; whether the UHCs will receive $100 million from the CFI remains uncertain as far as we can ascertain.

The total funding available could therefore reach $1.1 billion, if the CHUM and the MUHC each receive the projected $300 million from their foundations and the federal government.

7.2 CAPITAL COSTS

The capital budgets submitted by the CHUM and the MUHC in their proposals last December can be essentially summarized as follows:

CHUM

TABLE 2: SUMMARY OF CAPITAL BUDGET SUBMITTED BY THE CHUM FOR THE 6000 SAINT-DENIS STREET PROJECT

Capital costs (including complementary site and site works but excluding parking)	$1 249
Government of Québec contribution	$800
Federal government contribution for research-related needs (CFI)	$100
Contributions from the foundations and private sector	$200
TOTAL	**($149)**

(All amounts are expressed in millions of $.)

MUHC

TABLE 3: SUMMARY OF CAPITAL BUDGET SUBMITTED BY THE MUHC

Capital costs (excluding complementary site and parking)	$1 098
Government of Québec contribution	$800
Federal government contribution for research-related needs (CFI)	$100
Contributions from the foundations and private sector	$200
TOTAL	**$2**

(All amounts are expressed in millions of $.)

Even assuming that the federal government (CFI) will fund these projects, the CHUM is already forecasting a capital shortfall of close to $150 million for the execution of its project. The MUHC is not forecasting a significant shortfall.

According to the experts consulted by the Commission and the studies it conducted, the probable shortfall in the case of the CHUM is likely to be much more significant. The estimated cost of the CHUM project at the 6000 Saint-Denis Street site could exceed its projected level of funding by $490 million. The estimated cost of the MUHC project could exceed its projected level of funding by $265 million.

The Commission has attempted to establish the cost of the two projects as accurately as possible by examining the proposals of the two institutions in detail and having experts review all the main aspects of the execution of both projects. These experts focused on the major cost components of each project.

The Commission examined the costs estimated by the CHUM for its project at 6000 Saint-Denis Street and for its alternate project at 1000 Saint-Denis Street. For the MUHC, the Commission analyzed the only scenario proposed, the building of new facilities on the Glen Yards site and the use of the Montreal General Hospital as the complementary site.

7.2.1 CHUM PROJECT AT 6000 ST-DENIS STREET

According to the clarifications provided by the Minister to the two UHCs and the Commission, the cost of the projects must include all expenses normally considered by government authorities to be capitalizable, such as construction costs, professional fees, contingent administrative expenses, furniture, medical and information equipment and technology, etc., as well as expenses related to infrastructure such as land acquisition, site decontamination, expropriation of buildings and businesses as well as occupant relocations, and the cost of building the surrounding road infrastructure. This resource envelope also covers the renovation of an existing building in order to maintain a complementary downtown site and includes the operating costs of the SICHUM.

For the purpose of analysis, these cost components were grouped according to the following categories:

- site acquisition;
- construction costs including the building, provision for contingencies, site conditions, project management, professional fees and artwork;
- site works;
- information technology;
- equipment and furniture;
- infrastructure work;
- administrative fees;
- complementary and surplus sites.

All of these components are included in the total cost of the project. The Commission submitted each of these components to a detailed analysis and then compared them to the estimates provided by the CHUM in order to assess the likelihood that the submitted project would remain within the financial framework established by the Government of Québec.

The following table presents a comparative summary of the capital costs estimated by the CHUM and the Commission (see the breakdown of costs in Appendix 4 for further details). The Commission estimates the cost of the CHUM project to be approximately $1.6 billion, which represents a difference of $343 million compared to the CHUM's estimate and of over $490 million compared to the CHUM's projected level of funding.

TABLE 4: COMPARATIVE SUMMARY OF CAPITAL COSTS ESTIMATED BY THE CHUM AND THE COMMISSION FOR THE 6000 SAINT-DENIS STREET PROJECT

	CHUM Estimate 6000 Saint-Denis (in millions of $)	Commission Estimate (in millions of $)	Difference (in millions of $)
Site acquisition	122	122	0
Construction	769	919	150
Site works	3	10	7
Information technology	58	112	54
Equipment/furniture	226	249	23
Infrastructure work	5	50	45
Administrative fees	14	72	58
Complementary and surplus sites	52	58	6
TOTAL	**1 249**	**1 592**	**343**

The $343-million difference between the CHUM's estimate and that of the Commission may come as a surprise. How is such a discrepancy possible?

First, the $150-million difference in construction costs alone represents over 40% of the discrepancy. The Commission sought to fully understand such a large difference; to do so, it called upon cost analysts, architects, engineers and entrepreneurs who specialize in cost estimating. In brief, the construction costs of the CHUM, as is the case for any building, include the cost of erecting and outfitting the building itself as well as professional fees, site work costs and a provision for contingencies. While the CHUM's estimate of building costs is comparable to that of the Commission, its provisions for professional fees and contingencies are very low and represent a significant part of the discrepancy.

According to trade practices in the construction industry, it is not only useful but essential to establish such provisions in order to accurately estimate the cost of a project. The level of these provisions will vary depending on the project's stage of development. When the project is in its preliminary stage, the provision for contingencies will be higher than once the project has been determined in its smallest details.

However, the CHUM project at 6000 Saint-Denis Street is in a preliminary pre-project phase. As a result, the experts consulted by the Commission are of the opinion that the CHUM is seriously underestimating its provision for contingencies as well as professional and administrative fees.

Besides construction costs, other discrepancies are significant and merit an explanation. With respect to infrastructure, the necessary demolition of the Van Horne overpass and the construction of a tunnel between the Rosemont metro station and the future hospital, as described in the CHUM project, account for the $45-million discrepancy. Yet the CHUM proposal does not budget for this expense. In fact, it is not clear at present whether the Ville de Montréal or the CHUM would have to pay for this work. However, since these expenses would be, in large part, related to the presence of the CHUM at 6000 Saint-Denis Street and would not be necessary if the CHUM project were not built at this location, it seems reasonable to include them in the cost estimate for the CHUM project.

Information technology represents one of the most significant added values in the CHUM and MUHC projects. This technology is one of the best ways to link patients to the hospital's various services in real time as well as to improve productivity, accelerate the medical decision-making process and to facilitate the transfer of knowledge. Within the context of a joint assessment, the CHUM and the MUHC estimated the total cost of information technology at $225 million for both institutions, which means approximately $112 million each. This investment is to be made in two successive phases of $110 million and $115 million respectively from 2004 to the opening of the new facilities, which is expected in 2010. However, the two institutions have only considered about 52% of the investment cost required for information technology in the total project costs; the remaining investments are to be funded by other sources, which the Commission was unable to clearly identify. The Commission considers that both phases of information technology investment should be included in the total project costs. This represents an additional cost of $54 million as compared to that identified by the CHUM.

With respect to administrative fees, a significant discrepancy exists because the UHCs did not account for the expenses incurred by the two development corporations (SICHUM and MUHC-DC). As these expenses fall within the financial framework imposed on the UHCs, the Commission considers that they should be included in the costs of the projects.

In the opinion of the Commission, the rest of the discrepancy, which totals about $30 million, can be attributed to an underestimation of the cost of equipment and furniture.

It is worth noting that the CHUM expressed its wish to build its new hospital in compliance with energy conservation and environmental principles. In its proposal, it expressed its intention of using the green building concept. However, the Commission notes that the CHUM has not anticipated any additional costs for this. While this environmental approach is desirable, it usually comes with a higher price tag. According to the experts consulted by the Commission, additional costs must be budgeted to comply with these standards. The savings in operating costs that would result from conservation and environmental measures were not assessed.

Otherwise, the Commission's analysis of the two projects did not reveal any excesses on the part of the designers with respect to the qualitative aspects of the construction projects. For example, elements such as room size and the space devoted to diagnostic services and operating rooms correspond to what one would expect from a contemporary university hospital centre.

With a cost overrun of about $490 million as compared to the CHUM's projected level of funding, the CHUM must address a difficult question: how can it fit its project within the resource envelope without compromising the quality and functionality of facilities that must be on the forefront of technology?

According to the Commission, the solution is to reduce the size of the new facilities and increase the use of existing ones. After examining the issue, the Commission is of the opinion that a reduction in the number of beds in the new hospital would reduce costs without compromising the CHUM's mission. The CHUM has presented a new hospital project with 700 beds of which 175 are highly specialized and 525 are general or specialized. This large base of general and specialized beds, which is not justified by the CHUM's special mission, could be substantially reduced. Thus, the Commission believes that the size of the new hospital project could be reduced to 500-550 beds. This reduction in the number of beds could be offset by maintaining more beds in the complementary downtown hospital, which (contrary to the CHUM's proposal) could be run by the CHUM and used for teaching. The possibility of seeking further assistance from the federal government, the foundations and the private sector could also be examined.

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R15. That the CHUM review its project design for the 6000 Saint-Denis Street site, in the event that it decides to build its new facilities at this location, so that it fits within the resource envelope and, to this end, that it consider the possibility of:

- reducing the number of beds in the new hospital to between 500 and 550, therefore increasing the number of beds in the downtown complementary hospital; and
- seeking further assistance from the federal government, the foundations and the private sector.

7.2.2 CHUM PROJECT AT 1000 ST-DENIS STREET

As requested by the MSSS, the CHUM has provided an alternate scenario. According to this scenario, the CHUM project would be established at 1000 Saint-Denis Street, the current location of Hôpital Saint-Luc; this site would be expanded by acquiring adjacent land. The alternate site project was developed in the fall of 2003 and is consequently less detailed than the 6000 Saint-Denis Street project, which had been under consideration since 2000.

Nevertheless, the Commission evaluated the project submitted in the form in which it was presented. The alternate project at 1000 Saint-Denis Street includes 650 new beds (as opposed to the 700 new beds for the 6000 Saint-Denis site), and this would therefore entail the demolition of the current Hôpital Saint-Luc to build the new CHUM. The architectural design uses this downtown site to its full potential and builds upwards, which is permitted under the Ville de Montréal's plan of urban development or "Master Plan.

The CHUM estimated the cost of the project at over $1.22 billion whereas the Commission's estimate is closer to $1.5 billion. The difference between these two estimates is in the order of $274 million or $400 million with respect to the CHUM's projected level of funding.

TABLE 5 : COMPARATIVE SUMMARY OF CAPITAL COSTS ESTIMATED BY THE CHUM AND THE COMMISSION FOR THE 1000 SAINT-DENIS STREET PROJECT

	CHUM Estimate 6000 Saint-Denis (in millions of $)	Commission Estimate (in millions of $)	Difference (in millions of $)
Site acquisition	37	40	3
Construction	800	934	134
Site works	1	1	0
Information technology	58	112	54
Equipment/furniture	226	249	23
Infrastructure work	20	23	3
Administrative fees	14	71	57
Complementary and surplus sites	70	70	0
TOTAL	**1 226**	**1 500**	274

The difference in construction costs, established at $134 million, represents almost half of the total discrepancy of $274 million. This difference results mainly from an underestimation of the budget reserves for contingencies related to the design, construction, general site conditions and professional fees. Contingencies must be included in project costs and must be established at an appropriate level. In the opinion of the Commission, the amount provided by the CHUM for contingencies is insufficient.

As with the 6000 Saint-Denis Street project, the total costs for the two information technology phases were not included in the project costs. This technology is critical for the hospital to function and should be included in the project costs. Consequently, additional costs of $54 million should be budgeted for information technology.

The $23-million difference in equipment and furniture costs is mainly attributable to a discrepancy in the estimate for reusable equipment. Based on a detailed analysis, the Commission believes that the CHUM is overestimating how much of its equipment it will still be able to use in this project. Consequently, the CHUM will have to acquire more equipment upon moving to its new facilities.

Finally, the $57-million difference in administrative fees is due to SICHUM-related expenses as well as project planning fees, which should be included in the cost of the project pursuant to the financial framework established by the Government.

The scenario studied by the Commission presents a cost overrun of approximately $400 million compared to the CHUM's projected level of funding. To reduce this overrun, the CHUM will need to re-examine its project design to ensure that its project fits within the resource envelope. Again, this could mean reducing the size of the new hospital and increasing the use of the complementary downtown hospital and/or seeking further assistance from the federal government, the foundations or the private sector.

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R16. That the CHUM review its project design so that it fits within the resource envelope and to this end that it consider the possibility of:

- reducing the number of beds in the new hospital to between 500 and 550, therefore increasing the number of beds at the complementary downtown hospital, in this case Hôpital Notre-Dame; and
- seeking further assistance from the federal government, the foundations and the private sector.

7.2.3 MUHC PROJECT AT THE GLEN SITE

As it did for the CHUM, the Commission conducted a detailed analysis of the costs of the MUHC project at the Glen site. The following table presents a comparative summary of the capital costs estimated by the MUHC and the Commission (see the breakdown of costs in Appendix 4 for further details).

TABLE 6: COMPARATIVE SUMMARY OF CAPITAL COSTS ESTIMATED BY THE MUHC AND THE COMMISSION

	CHUM Estimate 6000 Saint-Denis (in millions of $)	Commission Estimate (in millions of $)	Difference (in millions of $)
Site acquisition	57	63	6
Construction	776	745	(31)
Site works	0	27	27
Information technology	58	112	54
Equipment/furniture	141	248	107
Infrastructure work	20	57	37
Administrative fees	46	59	13
Complementary and surplus sites	0	55	55
TOTAL	**1 098**	**1 366**	**268**

There is a difference of approximately $30 million between the MUHC's estimated construction costs and those estimated by the Commission. In this case, the MUHC's estimate is higher than that of the Commission. The difference lies mainly in the amount for professional fees, for which the MUHC's estimate is higher than that of the Commission.

With respect to site works, the Commission believes that it is inappropriate to exclude the cost of this work from total costs; the Commission estimates site work costs at $27 million. The CHUM included this cost in its budget.

Moreover, according to the Commission, the MUHC has largely underestimated the costs of acquiring furniture and equipment. There is a difference of over $107 million between the two evaluations. The Commission understands that the MUHC's evaluation of furniture and equipment costs is based on an accelerated equipment acquisition program that would be implemented before the opening of the new MUHC hospital and would enable the MUHC to relocate equipment that is still in working order. However, the Commission is somewhat skeptical as to the implementation of such a program, particularly since the foundations, which normally dedicate a significant portion of their resources to the acquisition of specialized medical equipment, will be busy raising more than $200 million to build the new MUHC hospital from now until 2010.

The estimated cost of $52 million mentioned by the MUHC to renovate the Montreal General Hospital is not included in the total estimated costs of the MUHC. Since the costs of renovating the complementary site are part of the financial framework of the project, this estimated cost should be included in the total.

For the same reasons as those invoked above in the CHUM case, the estimate for information technology costs must include an additional amount of approximately $54 million.

The institution has estimated the cost of building the surrounding road infrastructure to be in the order of $20 million, whereas the Commission's evaluation established this cost at $57 million based on an estimate from the Ministère des Transports.

Finally, the remaining difference of about $13 million is attributable to an underestimation of administrative fees.

It is worth noting that the MUHC, like the CHUM, expressed its wish to build its new hospital in compliance with energy conservation and environmental principles. The institution wishes to be certified by LEED (Leadership in Energy and Environmental Design). However, the Commission notes that the MUHC has not adequately anticipated the costs of doing so. An additional investment would likely be required to enable the MUHC to comply with LEED standards.

The project's total shortfall when compared to the MUHC's projected level of funding is in the order of $265 million. Such a shortfall cannot be reduced, in the view of the Commission, without a re-examination of the MUHC project; in all likelihood, this would involve a reduction in the number of beds in the new hospital and/or additional funding from the federal government, the foundations or the private sector.

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R17. That the MUHC review its project design so that it fits within the resource envelope and, to this end, that it consider the possibility of:

- reducing the number of beds in the new hospital to between 500 and 550, therefore increasing the number of beds in the Montreal General Hospital; and
- seeking further assistance from the federal government, the foundations and the private sector.

Three further comments must be made before we conclude our analysis of the projects' compliance with the financial framework established by the Government of Québec with respect to capital costs.

First, the two UHCs excluded the costs of laundry, heating, food services and parking from their estimated capital costs. The UHCs justified this omission by stating that they intend to call on the private sector to fund these elements either through a PPP, by outsourcing or by some other means. If these elements are indeed funded by the private sector and the construction of new capital assets is necessary, the cost of these assets would be reflected in the service charges imposed by the private partners, which would thus have an impact on the UHCs' operating budgets. If the construction of new capital assets is required but is not funded by the private sector, additional costs would have to be included in the capital budgets of the two UHCs. Given that the two UHCs provide few details regarding the nature of the facilities required for laundry, heating, food services and parking, and given that they have not estimated the capital costs pertaining to these elements, it is difficult for the Commission to evaluate the additional costs that could result from them. However, these potential costs must not be ignored.

Second, the Commission has not included the goods and services tax or the sales tax in its estimates. However, it may be necessary to add these taxes to the capital budget for the acquisition of goods or services, depending on the project's contracting approach or the status of the purchaser.

Third, according to the Minister's clarifications, the cost of financing the projects was not to be taken into account in the UHC projects or in the Commission's analysis.

7.2.4 REDUCING PROJECT COSTS OR BETTER COST CONTROL: PUBLIC-PRIVATE PARTNERSHIPS (PPPS)

As mentioned previously, the projects submitted by the UHCs already anticipate a capital shortfall for the construction of the facilities required; according to the research conducted by the Commission, construction costs may in fact be much higher than expected. The possibility of cost overruns in government projects of this type is very real. In addition, the nature of the facilities in question presents an additional challenge. All of the experts consulted by the Commission emphasized the fact that the physical facilities of the two UHCs must be able to constantly adapt to technological changes since the mission of these institutions is centred on highly specialized care. The private sector is often better able to effectively manage construction risks as well as the risks associated with evolving technology once the facilities have been built, to name only a few.

For these reasons among others, several Western countries and other Canadian provinces have successfully used public-private partnerships (PPPs) to build new health care infrastructure. In the United Kingdom, a huge project to modernize hospital infrastructure was begun in 1997. Since then, some 64 hospital projects (representing investments of over _9.5 billion, i.e., about $23 billion) have been completed or are currently being implemented in the form of public-private partnerships[6]. It is estimated that using public-private partnerships to build hospitals and other infrastructure in the UK has reduced cost overruns from 34% to 9% on average and has virtually eliminated delays in the construction of new facilities[7].

6 *Hospitals, The Canadian Case for Hospital PPP Projects,* The Canadian Council for Public-Private Partnerships, 2003, p. 15.

7 Ibid, p. 27.

Within the framework of a public-private partnership, the costs and risks inherent in the project are borne by a private sector company (usually selected by bid or some other analogous process) that is better able to assume and limit these costs and risks, in exchange for payment based in part on meeting performance standards. In this way, the public sector benefits from the innovation, expertise, creativity, flexibility and dynamism of the private sector while linking the economic interest of the private partner to performance criteria intended to ensure that users' needs are better satisfied and subject to public-interest requirements. By imposing performance criteria on private sector partners, the Government establishes that which must be achieved while allowing the private partner to determine the means by which these goals will be reached. Private partners thus have the flexibility required to apply all facets of their expertise in order to adapt their management approaches and interventions to all cyclical and technological changes. Public-private partnerships therefore represent an intersection between the interests of users, the government and private enterprise by ensuring an optimal combination of resources and skills from the public and private sectors so as to obtain the best quality service at lower cost.

Contrary to certain erroneous perceptions, recourse to public-private partnerships does not imply the privatization of health care. Instead, it represents a refocusing of the efforts and resources of the Government on its fundamental mission, which is to ensure that quality clinical care is provided to the public. In the UK, as elsewhere, public-private partnerships have been used for non-clinical activities, such as the construction and maintenance of buildings and the provision of support services such as food and laundry services.

A public-private partnership does not imply that the private partner is or becomes the owner of the hospital centre it builds. In most hospital PPP projects to date, a Design, Build, Finance and Operate (DBFO) formula has been used. For a DBFO, a private partner, usually selected by bid or some other analogous process, designs, finances, builds and operates new facilities for a prolonged period that corresponds to a significant portion of the life cycle of those facilities. The private partner does not own the facilities in question; it enters into a concession agreement to build the facilities on government land and to operate them in compliance with pre-established performance criteria for the duration of the concession. As payment to the private partner is conditional upon the availability and the level of performance of the infrastructure it supplies, it is in the private partner's interest that construction be completed on time and that the facilities meet with the needs of the public partner for the duration of the concession. The private partner also assumes all responsibility for financing. Lending institutions will exert pressure and exercise constant supervision to ensure the private partner fulfills its obligations. Their early involvement in the process will naturally impose greater financial rigour and discipline from the very first stages of the project.

It is true that the private sector cannot borrow money at as low a rate as the Government (interest rates for the private sector are 0.5% to 2% higher according to the British experience[8]) and that these costs are ultimately borne by the public partner. It is also true that the risks assumed by the private sector imply a return on investment or at least an expectation of a reasonable return for this risk. These elements of cost to the Government are nevertheless largely offset by the increase in efficiency and the other benefits offered by public-private partnerships.

8 The Canadian Council for Public-Private Partnerships, *Hospitals, The Canadian Case for Hospital PPP Projects,* 2003, p. 19.

The experts we consulted informed us that the parameters of the two projects submitted by the UHCs (particularly the financial ones) are too preliminary at this stage for a comparative analysis of project costs under the conventional approach versus public-private partnerships. Recourse to public-private partnerships for all or the majority of non-clinical aspects of a new hospital project, as has been the case for a number of British hospitals, is appealing because it allows for certain economies of scale, limits the number of stakeholders and thereby facilitates cohesion. There is still the possibility, however, that upon analysis, the conclusion will be reached that PPPs are not appropriate for certain non-clinical aspects of the projects (such as laundry, food services and heating). However, the Commission is of the opinion that a serious analysis of the advisability of completing all or some of the non-clinical aspects of the CHUM and MUHC projects in the form of PPPs is quite simply essential in today's context.

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R18. That both institutions examine, together with other alternatives, the use of public-private partnerships to perform appropriate non-clinical activities at a lower cost and that they justify their eventual choice of method.

7.3 OPERATING COSTS: INEVITABLE OVERRUNS

Operating costs are the expenses required to provide hospital care and services. These expenses include employees' salaries, drugs, food and any other expenses necessary to provide patients with the care they need and to pay for the other services required for the hospital to function. These costs are ongoing and recurring. In principle, the yearly budget granted by the MSSS covers these expenses. This overall budget was established in the 1970s and is indexed annually to take inflation and service development into account. With time, the historically based overall budget has been increasingly criticized because it corresponds less and less to the actual costs of treating patients as such costs have increased faster than the indexing rate. Case complexity, drug costs, increasing numbers of patients and personnel shortages have all led to serious financial imbalance over the last few years.

Despite a law prohibiting it, hospital deficits are rampant. The CHUM and the MUHC have not escaped this phenomenon. Both have operating deficits for the current year of approximately $30 million.

Faced with this situation and aware of the problem, the MSSS has examined various ways to tighten the budget and establish a clearer link between the budget and hospital activities.

One of the major challenges faced by university hospital centres is to recognize and budget for highly specialized activities, which, by definition, are more expensive to provide. After examining operating costs, we will return to this issue.

In light of the documents submitted and the exchanges with the MUHC and the CHUM, it is highly unlikely that the resource constraints established by the Minister in his letter of July 2003 will be respected in either of the projects, especially since the government guidelines did not provide for any increase in operating budgets.

The MUHC does not appear to have projected its future clientele's demand for care in order to estimate the impact of such a demand on its operating budgets. The CHUM analyzed its target clientele's demand for care in 2010. In addition, the CHUM developed its own model of financial projections, which may prove to be useful; however, since this model has not been thoroughly reviewed from a theoretical and practical standpoint, it cannot be retained without further analysis.

Since the two institutions did not apply a standard and official budget projection method, the Commission has elected to use the Bédard method. This method was developed by the MSSS to establish the budgets of hospital centres based on their activities rather than on historic budgets. This method is still under development; however, despite its weaknesses, it is the best we have to forecast the financial impact of the two UHC projects.

This method thus produces results that must be interpreted in terms of orders of magnitude. The development of a methodology that will produce precise results and estimates is not yet within the reach of the health care system. According to the experts consulted, a great deal of research and analysis will be required to achieve this. The Bédard method can nevertheless give a reasonable overview of the budgetary evolution of the two UHCs.

The Commission studied the various elements of the CHUM and MUHC projects that could have an impact on recurring operating costs. These factors demonstrate that the two UHCs' current operating budgets are insufficient for them to successfully carry out all of the activities involved in their projects. The experts consulted by the Commission proposed several hypotheses with respect to activity volumes, tertiary activities and the intensity of teaching, among other things, in order to estimate operating costs. Certain estimates were based on a range of possibilities, as more than one hypothesis was examined.

The application of the Bédard method provides recurring cost overruns in the order of $100 million per annum for the CHUM and $50 million per annum for the MUHC, if the hypotheses used are confirmed.

7.3.1 CHUM OPERATING COSTS

OBJECTIVES FOR ACTIVITY VOLUME AND CONCENTRATION OF HIGHLY SPECIALIZED CARE

From projection year 2002-2003 to 2010, the CHUM forecasts a 26% increase in the number of hospitalizations and a 4% increase in the number of emergency visits. Activity volume increases somewhat less significantly if 2001-2002 (the last year for which the factors for the Bédard formula are available) is used as the reference year. If the increase in the severity of cases is taken into account (given the concentration of highly specialized care) and the Bédard method is used to produce a projection, additional costs per annum reach $45 million.

IMPACT OF INCREASING TEACHING INTENSITY

Medical teaching, which is generally concentrated in UHCs, has a major impact on the cost per hospitalization and the average length of stay (ALOS): ALOS is generally longer. In addition, the most significant variable is a measure of intensity, that is, time spent on medical instruction per bed. Since the number of medical students and residents is expected to increase and the number of beds to be somewhat reduced, we must anticipate that this variable will increase significantly.

Based on its own method, the CHUM estimated a $35.9 million increase in operating costs per annum, given the increase in research and teaching activities. By applying the Bédard method, a 30% increase in the teaching intensity variable, combined with new activity volumes, would increase operating costs by $36.6 million; a 50% increase in the teaching intensity variable would increase them by $53.2 million. Thus, the forecast increase in operating costs is between $36.6 million and $53.2 million.

PRACTICE PLAN

The projects of the CHUM and the MUHC mention the necessity for increased funding to enable them to implement practice plans within their organizations. This new money represents added financial incentives to recruit and retain health professionals and would be in addition to the amounts generated in the traditional manner; the objective of the practice plan is to ensure that health professionals are compensated at a rate comparable to that which they would receive if they focused solely on clinical activities.

As indicated previously, the CHUM has estimated the cost of implementing a practice plan at $10 million per annum. Although this estimate may be lower than that which will actually be required, in the absence of other evidence, we will assume that $10 million per annum is representative of the amount applicable to the CHUM.

PARKING AND OTHER SUPPORT SERVICES

This subject appears not to be covered in the CHUM's proposal; it was not specifically discussed. Consequently, we have not adjusted the figures under this heading.

CHANGES TO POST-HOSPITALIZATION CARE: LONG-TERM CARE AND REHABILITATION BEDS

In their projects, the CHUM and the MUHC hypothesized that the UHCs would no longer have long-term care or rehabilitation beds, except those funded by the Agency. The fact that these costs would now be borne by an organization other than the UHCs does not change the fact that they are an integral part of the new project's operating budget, since the Government of Québec will pay for them in either case. On the other hand, the financial advantage of having these beds outside the UHCs is that this care can probably be provided at a lower cost in another setting.

In the case of the CHUM, this represents 200 long-term care beds and 40 rehabilitation beds. The cost of each of these beds is estimated by the CHUM to be $50,000 to $60,000 per annum; this is an annual estimate that is substantially lower than that produced by the MUHC. The financial impact of removing these 240 beds, whose annual maintenance costs would be transferred to the rest of the system, has been established at between $12 million and $14.4 million per annum, according to the CHUM's figures.

CHANGES TO PRE-HOSPITALIZATION CARE

In the same vein, one of the premises of the projects is that first-line services (pre-hospitalization) would be reformed to improve efficiency upon admission and promote better first-line management of patients who use CHUM and MUHC services.

This subject was not addressed in the CHUM's proposal. Based on MUHC data and taking into account that the CHUM's activity volume is slightly higher than that of the MUHC, we have added another $4 million per annum for this element.

ADAPTING TO NEW SITES

The project presupposes that a start-up phase will be implemented immediately prior to the UHC's opening in order for the personnel to become familiar with the new facilities, as well as to integrate the various work groups and work cultures and to ensure that the UHC is managed in a manner complementary to the downtown site. The costs related to adapting to the new sites are non-recurring.

We accept the percentages proposed by the CHUM, namely an additional 10% of operating costs in year 1 and an additional 5% in year 2. The actual experiences of new hospital centres such as the Centre hospitalier Pierre-Le Gardeur in Lachenaie indicate that significant additional expenditures are required in the two years preceding the UHC's opening, which have not been taken into account in the CHUM's project.

The table below is a summary of the impact of the recurring elements mentioned above based on expenditures of $520 million (revenues plus deficit) for 2002-2003.

TABLE 7: SUMMARY OF ELEMENTS WITH AN IMPACT ON RECURRING OPERATING COSTS – CHUM

Activity volume + tertiary activities:	> $45 M
Teaching:	$ 36,6 - 53,2 M
Practice plan:	> $10 M
Parking:	>$ 0 M
Long-term care and rehabilitation beds:	> $12 - 14,4 M
Front-line services:	> $4 M
TOTAL :	**$103,6 - 126,6 M**

The Commission estimates potential cost overruns for recurring expenses at $100 million to $125 million for the CHUM project.

7.3.2 MUHC OPERATING COSTS

OBJECTIVES FOR ACTIVITY VOLUME AND CONCENTRATION OF HIGHLY SPECIALIZED CARE

From projection year 2001-2002 to 2010, the MUHC does not forecast any significant increase in the number of hospitalizations. Only a reduction in the average length of stay (ALOS) would enable the MUHC to maintain this level of clinical activity with a reduced number of beds.

In addition, the MUHC forecasts a greater concentration of highly specialized care in 2010 as compared to 2001-2002, which adds to the complexity of the MUHC's case mix.

Taking these two factors (volume and complexity) and introducing them into the Bédard formula results in additional expenses in the order of $5 million to $8 million per annum.

IMPACT OF INCREASING TEACHING INTENSITY

By applying the Bédard method, as we did for the CHUM, we calculated that a 30% increase in the teaching intensity variable, combined with new activity volumes (hospitalization, day surgery and emergencies), would increase operating costs by $20 million per annum; a 50% increase in the teaching intensity variable would increase them by $33 million.

Subject to a calculation based on more specific data, we believe for the moment that an appropriate range would be an additional $20 million to $33 million per annum.

PRACTICE PLAN

The MUHC did not quantify the additional annual expense of a practice plan. The CHUM, on the other hand, estimated this expense at $10 million per annum. Although this estimate may be lower than what will actually be required, we will retain the estimate of $10 million per annum to cover this expense..

PARKING AND OTHER SUPPORT SERVICES

In the planning of the new site, it is anticipated that certain peripheral activities will be entrusted to the private sector. Activities such as parking would thus become the responsibility of a private sector partner who would fund capital and operating costs. According to our discussions with MUHC representatives, parking alone generates net revenues of about $3 million per annum, which contributes to a balanced budget. Since parking would not yield these net revenues to the MUHC, having been granted as a concession to a third party that would assume its capital costs, a loss of profit of $3 million should appear in the MUHC's operating budget.

CHANGES TO POST-HOSPITALIZATION CARE: LONG-TERM CARE AND REHABILITATION BEDS

The MUHC estimates its operating costs for long-term care and rehabilitation beds to be in the order of $10 per annum. If we hypothesize that managing these beds in a less specialized setting than a UHC could mean savings in the order of 25% to 30% (according to a rough estimate), this means that an annual amount of $3 million should be considered as savings within the system. However, annual costs of $7 million must still be borne by the rest of the health care system in order to maintain long-term care and rehabilitation beds; following the same logic as for the CHUM, these costs should be included in the operating costs.

CHANGES TO PRE-HOSPITALIZATION CARE

In the same vein, one of the premises of the projects is that first-line services (pre-hospitalization) would be reformed to improve efficiency upon admission and to promote better first-line management of patients who use CHUM and MUHC services. As a result, the MUHC estimates that its operating expenses would be reduced by approximately $7 million per annum. However, these services would now be provided by the first line, which would receive monetary compensation in return, although undoubtedly at a lower level since these services would now be provided in a less specialized context. If we assume potential savings of 50% and that the budget of $492.7 million (or its equivalent) would be maintained without adjustment for this variable, then the projected budget must be increased by $3.5 million per annum to reflect the cost transferred to the health care system in general.

ADAPTING TO NEW SITES

The MUHC did not specifically address this issue. As mentioned previously, the CHUM concluded that an additional 10% of operating costs in year 1 and an additional 5% in year 2 should be anticipated; the predicted budget would only be reached in year 3. The variable mentioned previously regarding the increased costs for the two years prior to opening a new hospital centre also applies here although we have not developed any specific hypothesis to estimate these costs. Again, it is appropriate to note that these costs are non-recurring.

TABLE 8: SUMMARY OF ELEMENTS WITH AN IMPACT ON RECURRENT OPERATING COSTS – MUHC

Volume + tertiary activities:	$5 - 8 M
Teaching:	$20 - 33 M
Practice plan:	> $10 M
Parking:	> $3 M
Long-term care and rehabilitation beds:	> $7 M
First-line services:	> $3,5 M
TOTAL :	**$48,5 - 64,5 M**

In light of the above, the Commission estimates additional costs in the order of $48 million to $64 million to implement the activities planned by the MUHC in its project.

Operational overbudgeting has been at the heart of the debate on the evolution of health expenditures for several years. It is worth mentioning that the report prepared by the Commission d'étude sur les services de santé et les services sociaux (Clair Commission) estimates Québec's systemic increase in health expenditures at 5.1%[9], while the rate in the rest of Canada is 6%. This rate of increase is clearly higher than that of the GDP growth, which leads to the financial impasse anticipated in all Canadian provinces.

In our view, it is unrealistic to expect the CHUM and the MUHC to bear the burden of maintaining a budget without any increases alone. In addition, both UHCs are likely to face higher-than-average rates of increase in costs given their highly specialized activities. A funding problem already exists in the two UHCs, and the Commission believes it would exist anyway, even without these development projects.

According to the conclusions of the Clair Commission and the Commission on the Future of Health Care in Canada (the Romanow Commission), financial pressures will increase in the next few years[10]. The mission of the UHCs is to provide highly specialized care to the public, and in many cases, they are the only ones to do so. As we have seen, the demand for highly specialized care will increase gradually over the next few decades. The costs of these services are very high and they will likely only grow higher. In such a context, how can the UHCs' mission of providing highly specialized care be reconciled with requirements for a balanced budget?

Given the budget limits they are facing, UHCs may be inclined to reduce their most expensive activities, thereby decreasing the number of highly specialized services they offer. To overcome such a situation, the resource envelope for highly specialized care should be separately identified. This way, the UHCs will benefit from budget protection for highly specialized care, which is part of their specific mission. Such an approach ensures that the population will continue to have access to these services.

Examining the larger issue of growing health costs should be the subject of a public debate. Will Québec have the resources it needs to continue to provide services as it does now, at the risk of having to compromise access to services, or must it adjust the way it provides those services involve all actors that might offer solutions and continue offering services that satisfy the needs of the population? For the moment, the Commission notes that the two institutions will clearly not be able to carry out the activities expected of them within their current operating budgets.

9 Commission d'étude sur les services de santé et les services sociaux, *Emerging Solutions: Report and Recommendations,* Québec: MSSS, 2000, p. 146.

10 R.J. Romanow, *Building on Values: The Future of Health Care in Canada,* Commission on the Future of Health Care in Canada: Ottawa, 2002.

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R19. That the UHCs be given a specific incentive-based budget to maintain, consolidate and develop tertiary and quaternary activities, teaching and research;

R20. That the resource envelope for highly specialized care be separately identified as well as indexed and allocated according to the ministerial guidelines regarding the concentration of these activities in UHCs.

7.3.3 ASSOCIATED MEDICAL CLINICS: A MEANS TO OFFER CERTAIN MEDICAL SERVICES AT LOWER COSTS

Associated medical clinics are an interesting development that would help the CHUM and the MUHC balance their budgets while offering accessible, quality services to the public. For the Commission, these clinics represent a promising solution, which the MSSS should seriously consider.

In 2000, the Clair Commission proposed a coherent organization of specialized medical and hospital services. It recommended that:

The secondary care and tertiary care specialized medical and hospital services be consolidated on the basis of the following factors:

- *Hierarchical configuration of medical services;*
- *Reorganization of emergencies;*
- *Affiliation of specialist clinics with hospitals;*
- *Clarification of the university's mission.*[11]

In addition, to improve flexibility in the provision of specialized services, the Clair Commission proposed that:

Specialists' offices or clinics be affiliated with a hospital and thus become the operational extension.[12]

Finally, the Clair Commission advocated a partnership policy framework with the private sector and thereby recommended that:

The Government of Québec adopt a policy framework of partnership with the private sector and third sector;

This policy speed up the investments necessary to adapt services to the new realities and improve accessibility of services for everyone regardless of their income. [13]

This recommendation thus proposes joining forces with the private sector in providing the clinical health services that the population needs, in the context of public funding of these services:

Partnership with the private sector for the production and management of services must not be an opportunity for privatization of funding. [14]

Although these recommendations were generally well received both by the authorities and by most health care providers, we note that, four years after the publication of this commission's report, these recommendations have yet to be acted upon.

11 Commission d'étude sur les services de santé et les services sociaux, *Emerging Solutions: Report and Recommendations,* Québec:MSSS, 2000, p. 75.

12 Ibid, p.85.

13 Ibid, p.173.

14 Ibid, p.174.

However, the idea that private enterprise could contribute more significantly to the management or the provision of specialized medical services has continued to receive support at various levels. For example, the Collège des médecins du Québec indicated the following in 2003:

> *[Translation]*
>
> *Active and partial privatization of service provision within a framework of public funding is essential to offset the rigidities of the system. It would help to create a new dynamic in which those on the front line would have a greater sense of responsibility and would feel that they were regaining a certain amount of control over their activities and "their" system of services.*[15]
>
> *[. . .]*
>
> *For the Collège, a healthy management of medical services means depoliticization and public-private partnerships, whether in institutions or affiliated specialists' offices. These private resources can provide services that would be managed under contract with a para-public organization; they would operate within the public system, for the benefit of all.*[16]

Several reasons militate in favour of a new approach to managing and dispensing specialized medical services.

First, given the shortage of medical personnel, long waiting lists and certain frustrations related to the complexity of major hospital centres, there is a real risk that physicians will be attracted by a lucrative practice outside the collective health care system, whether here or elsewhere. This is already apparent in certain disciplines.

In the view of the Commission, it is important for the Québec health care system not only to permit but also to encourage different specialized service delivery models. This diversity is an asset that would help maintain the greatest possible number of physicians in Québec within the publicly funded health care system. Physicians who are dissatisfied with the way our hospitals function must be able to find models here that are more suitable for them, without having to move elsewhere or leave the public system.

The concept of affiliated clinics, developed by the Clair Commission, offers several other advantages. It is consistent with the evolution of medical technology, which, in several specialties and for a high percentage of patients, enables diagnosis and treatment to be carried out on an outpatient basis in a clinic, without the necessity for hospitalization. As hospital resources are therefore called upon less frequently, their technical platforms remain available for cases that really need them; costly resources are also generally reserved for patients who really require them. The use of these resources is therefore optimized.

This concept favours the concentration of clinical expertise and, as a result, of excellence. It gives specialists greater control over their clinical and professional environments, as well as over the timely introduction of new technology, while making them aware of resource costs; in addition, it allows users to benefit from high-quality services in their community. This trend towards dispensing highly specialized care and services within the community can also be observed in Europe and the United States. It is the result of technological evolution and individuals' desire to receive specialized services in a less institutionalized setting. There is no underlying ideological basis for this trend.

15 Collège des médecins du Québec, *La Réorganisation et la gestion des services médicaux : Mieux, autrement et selon nos moyens,* 2003, p.8..

16 Ibid, p.8.

Moreover, the existence of associated specialized clinics would allow various management models to coexist with the traditional public management model. Numerous Western countries are now benefiting from greater organizational diversity by using private management or private service dispensation within a public system.

The acquisition of often costly equipment could also be accelerated through private funding at a time when the capital budget of the MSSS is very tight. In addition to freeing the Government from these capital expenses, the transparency and traceability of public funds invested in specialized services could be increased considerably, while the quantity, quality and costs of the services actually provided could be better controlled.

The Commission believes that a network of associated private clinics could provide effective support for the public sector. They could also contribute a substantial amount of care that does not need to be provided in hospitals such as the CHUM and the MUHC, which have very complex and costly technical platforms.

In addition to increasing the flexibility of the health care system, such a network of specialized medical clinics could also significantly contribute to reducing waiting times in several medical specialties. These clinics would be accredited by the MSSS and would sign an agreement with a hospital centre. The UHCs and universities could also use these associated clinics for training specialists. Establishing a partnership between academic institutions and this type of clinic, anchored in the community, would certainly involve advantages for all.

Within this perspective, the CHUM and the MUHC would be in a position to reduce their number of beds for primary and secondary care while being assured that this care would be provided either by other public hospitals, such as their complementary downtown hospital centre, or by associated private clinics. These associated private clinics would have to provide services in compliance with the same standards of quality and accessibility. Funding arrangements remain to be determined, but, in all cases, simplicity and transparency must be favoured in the payment for services and, to the extent possible, by episode of care. It is highly probable that a large number of services would be substantially less costly to provide in such clinics than in university health centres. Thus, UHCs would be able to concentrate more on their mission, which is to offer specialized care to the entire population of Québec, and the health care system in general would become increasingly flexible, productive and efficient.

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R21. That support be given to the development of associated medical clinics in order for them to offer certain general and specialized activities in compliance with the same standards of quality as are practised in hospital centres;

R22. That general and specialized activities that do not need to be offered by the UHCs be identified and transferred to associated medical clinics, which would have to provide these services in compliance with the same standards of quality and accessibility as are practised in hospital centres;

R23. That the appropriate financial framework be determined to support the development or consolidation of associated medical clinics.

8

UHC Site Locations

Report of the Commission d'analyse des projets d'implantation du Centre hospitalier de l'Université de Montréal et du Centre universitaire de santé McGill

April 2004

8. UHC SITE LOCATIONS

The locations of UHC facilities must be compatible with their mission. Given their supraregional vocation, UHCs must be easily accessible to the population that does not live nearby. Their leading role in our health care system also presupposes a stimulating environment and a certain visibility.

The choice of locations for the construction of the new CHUM and MUHC facilities is critical to the success of the projects under study. Poor location choices are sometimes dictated by short-term concerns, such as political issues within organizations. In other cases, they are the result of a poor assessment of the future. In all cases, however, a poor choice of location has negative and, unfortunately, long-lasting consequences.

In its examination of the sites proposed, the Commission attempted to avoid these pitfalls. Again, the Commission was principally guided by the well-being of patients and their families as well as by the optimal use of government resources in promoting the enhancement of academic medicine, in both cases based on a long-term vision.

8.1 CHUM Site

The CHUM proposal submitted in December 2003 provides for the construction of a new 700-bed hospital that would bring together all university hospital activities at 6000 Saint-Denis Street and would see Hôpital Saint-Luc used as a complementary downtown general and specialized hospital centre (CHSGS) with at least 300 beds. This downtown site would provide complementary level I and II (general and specialized) care. The CHUM specified in its proposal that it does not wish to manage the downtown CHSGS. In addition, Hôtel-Dieu de Montréal and Hôpital Notre-Dame are considered to be surplus space in the CHUM proposal.

One of the underlying objectives of centralizing university activities on a single new site is to promote cohesion as well as solidarity among CHUM professionals and staff. These elements are sometimes lacking at present, as CHUM activities are carried out in three sites (Hôtel-Dieu de Montréal, Hôpital Notre-Dame and Hôpital Saint-Luc), each of which has its own history, tradition and culture. Although this objective is desirable, it should not be achieved at the detriment of the interests of Québec patients and taxpayers. Moreover, the Commission believes that a project as positive as the enhancement of academic medicine at the CHUM, albeit divided into two sites instead of one, must mobilize all CHUM physicians and personnel from the moment the project begins to be implemented. The many false starts that have marked this project over the last few years seem to have created a certain skepticism among medical professionals at the CHUM, which is not very favourable to the changes and concessions that such a project may demand.

At the request of the Minister, the CHUM submitted an alternate scenario that would make the 1000 Saint-Denis Street site (i.e., the current Hôpital Saint-Luc site plus some adjacent land) the only site for the new CHUM and would convert Hôpital Notre-Dame into a downtown CHSGS. According to this scenario, Hôtel-Dieu de Montréal would still be considered surplus space. The alternate scenario for the 1000 Saint-Denis Street site was less well developed than the proposal for the 6000 Saint-Denis Street site.

In light of its work, the Commission has concluded that 6000 Saint-Denis Street is not a desirable site for the construction of the CHUM's new hospital. On the other hand, the 1000 Saint-Denis Street site presents numerous characteristics that make it very attractive even though the architectural design proposed requires improvement, and the construction of a new hospital in that location presents certain technical challenges. In a context where, in order to fit within the budget framework, the number of beds in the new hospital would be reduced and an existing site (Hôpital Notre-Dame in this case) would be maintained, building the new hospital on the 1000 Saint-Denis Street site seems all the more logical.

The factors that led to these conclusions are summarized below. We will address the issue of the CHUM's surplus buildings later in section 9.3 ("Reuse of Surplus Buildings").

8.1.1 THE 6000 SAINT-DENIS STREET SITE

8.1.1.1 A hard-to-access supraregional hospital

The CHUM's supraregional mission requires its facilities to be easily accessible, both by public transit and via regional and supraregional road networks.

The 6000 Saint-Denis Street site does not fit this criterion, as it can only be reached via local streets. A detour via side streets is necessary to reach it from the south and west. It is also relatively far from the Ville-Marie Expressway and the Metropolitan Highway, as well as from hotel facilities, which patients and their families may need. There is only one metro station that is actually close to the site (Rosemont metro station, orange line).

8.1.1.2 A highly specialized hospital on the boundaries of residential and industrial areas

Despite the commendable efforts of the designers of the preliminary architectural plans submitted by the CHUM, the new CHUM at 6000 Saint-Denis Street would probably give the impression of a massive and disproportionate building having been "parachuted" into the middle of a residential area. Its integration into the urban fabric seems highly questionable. The 6000 Saint-Denis Street site does not even have the advantage of being close to Université de Montréal. Worse still, the high density of a UHC located at 6000 Saint-Denis Street and the volume of activity it would generate would be likely to cause heavy traffic in the surrounding residential area; the hospital could thus become an undesirable neighbour.

Building the CHUM in this residential area has other risks, which, though less apparent, are nevertheless significant.

First, a new hospital on the forefront of technology would certainly attract the area's residents, who would naturally tend to come to it for general or specialized care that is also provided by other hospital centres. It would put great pressure on the CHUM, whose mission is to concentrate on highly specialized services, to use its beds and other resources for general and specialized services. As mentioned previously, general and specialized care often cost more in university hospital centres than in CHSGS. In addition, such a trend would threaten the survival of the CHSGS Jean-Talon, whose mission is to provide just such general and specialized services to the local population. Building the CHUM at 6000 Saint-Denis Street would therefore risk diverting it from its mission and misusing hospital resources.

The Commission is also concerned about the low potential for cross-fertilization between the CHUM and its immediate environment, in the event that it is built at 6000 Saint-Denis Street. Few health-related businesses exist in this area and there is little evidence that the presence of the CHUM would change that, notably because the only sites still available are located in disused industrial zones either on the other side of the railway tracks bordering the CHUM site to the south or on its north-east side. The gamble of building major facilities far from the downtown core in the hope of revitalizing the neighbouring area has already been tried on several occasions in Montréal without much success. This "sprawling" logic is outmoded today. In our opinion, the CHUM project and the investments involved are too significant to risk locating the CHUM in an environment that is not already suited for an institution of higher learning.

The preliminary architectural plans submitted by the CHUM for the 6000 Saint-Denis Street site are similar in some ways to those submitted by the MUHC for the Glen site. However, the space at 6000 Saint-Denis Street is more limited than at the Glen site and is not in a similarly strategic location. In this context, it seems much wiser to us for the CHUM to opt for a clearly urban location and architectural design as is proposed for the alternate site at 1000 Saint-Denis Street. The Commission is of the opinion that building the new CHUM at 6000 Saint-Denis Street would be a strategic error.

8.1.1.3 Limited opportunities for expansion

The surroundings of the 6000 Saint-Denis Street site are already built up and occupied to the west, north and east. In addition, municipal zoning and the nature of the site limit the possibilities of expanding upwards. This leaves two expansion options: building in the south part of the site along the railway tracks or adding floors within allowable limits and using space left unoccupied in the initial design, which increases the density of a building that is already imposing for this area.

8.1.1.4 Safety issues: Proximity of busy railway tracks

The fact that the 6000 Saint-Denis Street site is located near the busy Canadian Pacific railway tracks obviously raises safety issues, particularly the risk of freight cars transporting hazardous material derailing near the hospital. According to the CHUM's proposal, this risk [translation] "should be put into perspective given low train speeds (30 kilometres/hour), the rarity of hazardous material on trains (117 freight cars in 1999), the absence of switches and railway crossings in this area, the absence of crossroads and level crossings, and statistics indicating the absence of accidents in this section of the tracks." The CHUM's preliminary architectural plans include several risk-mitigation measures, such as creating an 80-metre buffer zone between the hospital and the railway tracks, building a wall of about 6.5 metres in height, and creating a linear green space within the buffer zone between the hospital and the railway tracks. Consultations led by the Commission, notably with the Ministère de la Sécurité publique, only confirmed that opinions are divided as to the level of risk represented by the nearby railway tracks and the adequacy of the risk-mitigation measures proposed. In the short amount of time with which it was provided, the Commission was unable to arrive at specific and definitive conclusions regarding these issues. However, in light of the information it obtained, the Commission concludes that the proximity of the Canadian Pacific railway tracks represents a significant risk that clearly militates against the 6000 Saint-Denis Street site. In the event that the decision is made to build the CHUM on this site anyway, the Commission strongly recommends that a more in-depth examination of the risk-mitigation measures related to the presence of the railway tracks be conducted.

8.1.1.5 Avoidable costs

Building the CHUM at 6000 Saint-Denis Street would involve substantial costs for the acquisition and decontamination of the land. Some of these costs are known; others are not.

The 6000 Saint-Denis Street site is currently occupied by four owners: the Ville de Montréal, the Société de transport de Montréal (STM) and the companies Kaba Ilco Inc. and L. Villeneuve. Agreements in principle were signed in 2002 with the STM for $60.5 million (a $47.5-million indemnity, transfer of part of the Hochelaga land and a $13-million subsidy) and with the Ville de Montréal for $17.5 million. The CHUM informed us that these two agreements were nevertheless subject to several conditions and could not be ratified. In addition, the CHUM informed us that an acquisition, relocation and indemnity agreement was also signed between the SICHUM, the Corporation d'hébergement du Québec and Kaba Ilco Inc. for $44.1 million. It is not clear whether this agreement is still in effect. No agreement was signed nor any assessment made concerning the property of L. Villeneuve since the preliminary architectural plans did not anticipate using this land. The cost of decontaminating the land is estimated at about $9 million.

The costs for the acquisition and decontamination of the land at 6000 Saint-Denis are thus currently estimated to be at least $122 million. To this should be added $2.5 million for the construction of a pedestrian link to the Rosemont metro station, $2 million to improve the surrounding road infrastructure and all or part of the $40 million required to demolish the Van Horne overpass. These costs could be substantially reduced by opting for the alternate scenario at 1000 Saint-Denis Street, where the CHUM already owns most of the land in question.

8.1.2 THE 1000 SAINT-DENIS STREET SITE

8.1.2.1 Ease of access in keeping with its vocation

The location of the 1000 Saint-Denis Street site is ideal given the CHUM's supraregional mission. It is easy to reach by public transit, being within walking distance of the Berri-UQÀM (green, orange and yellow lines) and Champ-de-Mars (orange line) metro stations. It is also easy to reach by highway, given, for example, its proximity to the Ville-Marie Expressway. Hotels and a multitude of other services are located nearby for patients, their families and others (invited professors, researchers, etc.) who may frequent the institution.

8.1.2.2 A well-integrated and stimulating urban location

Contrary to the 6000 Saint-Denis Street site, the 1000 Saint-Denis Street site is already located in a stimulating environment that is ideal for an institution of higher learning. For example, UQÀM and the Grande Bibliothèque to the north, the downtown core to the west, the Palais des Congrès to the south and Radio-Canada to the east are all within walking distance. Such an environment is favourable to the cross-fertilization of knowledge and offers several advantages to health-related businesses that may want to establish themselves near the CHUM.

The physical integration of a sizeable building in the downtown core obviously does not present the same problems as it does in the area where the 6000 Saint-Denis Street site is located. Finally, the commercial benefits for the neighbouring area are much more certain in the 1000 Saint-Denis Street scenario than in that of 6000 Saint-Denis Street.

8.1.2.3 *Reasonable opportunities for expansion*

According to the experts consulted by the Commission, the 1000 Saint-Denis Street site, although substantially smaller than the 6000 Saint-Denis Street site, offers reasonable opportunities for expansion, specifically because it is possible to build upwards. Moreover, some of the land adjacent to the site has already been identified in the preliminary architectural plans as being appropriate for expansion. Considering where the land in question is located, its acquisition cost could be relatively high.

8.1.2.4 *Safety issues: No major risks*

The 1000 Saint-Denis Street site does not raise any major safety issues; the main sources of danger identified by the experts, i.e., the Ville-Marie Expressway and the Molson factory on Saint-Antoine Street, do not represent the same level of risk as the Canadian Pacific railway tracks close to the 6000 Saint-Denis Street site. Obviously, the presence of these sources of risk is not ideal, but neither is it unexpected in an urban context. Nevertheless, the Ministère de la Sécurité publique recommends a more in-depth study of this issue in the event that this site is selected for the new CHUM facilities.

8.1.2.5 *Avoided costs and a better use of existing facilities*

Land acquisition costs could be avoided by opting to build the new CHUM hospital on the 1000 Saint-Denis Street site, since the CHUM already owns most of the land involved in this scenario. In fact, the CHUM estimated the land acquisition costs at only $5 million for this alternate site. Decontamination costs are estimated at approximately the same amount as for the 6000 Saint-Denis Street site. Opting for the 1000 Saint-Denis Street site would also mean avoiding other costs related to the localization such as those involved in demolishing the Van Horne overpass. It is true, however, that building the new CHUM hospital on the 1000 Saint-Denis Street site will involve other costs such as those required to maintain operations at Hôpital Saint-Luc for the duration of the construction period. These latter costs, although difficult to estimate with precision at this time, would probably be inferior to the savings involved in opting for the 1000 Saint-Denis Street site over the 6000 Saint-Denis Street site.

The 1000 Saint-Denis Street scenario also means that Hôpital Notre-Dame would remain in use, thus securing a return on the major investments made in this hospital until quite recently.

8.1.2.6 *A complementarity factor*

The fact that the 1000 Saint-Denis Street site and the Glen site selected by the MUHC are located in close proximity to each other and to the same highways would facilitate the movement of individuals between the two sites in addition to greatly favouring complementarity between them.

8.1.2.7 Preliminary plans needing improvement

The Commission recognizes that the preliminary architectural plans for the 1000 Saint-Denis Street site were prepared relatively rapidly, following the Minister's request in July 2003. The fragmentation of the site into blocks divided by Sanguinet and de la Gauchetière streets presents certain challenges. The experts consulted by the Commission also highlighted certain weaknesses in the preliminary plans, such as a division of service areas, which is incompatible, in certain cases, with a patient-centred approach. The preliminary architectural plans for the 1000 Saint-Denis Street site thus need improvement.

IN LIGHT OF THE ABOVE, THE COMMISSION RECOMMENDS:

R24. That the new CHUM facilities not be built at 6000 Saint-Denis Street given the constraints that characterize the site and render it undesirable for such buildings;

R25. That the CHUM opt for the 1000 Saint-Denis Street site as the location of its new facilities;

R26. That Hôpital Notre-Dame be used as the complementary site.

8.2 MUHC SITES

8.2.1 THE GLEN SITE: A WISE CHOICE

The MUHC only proposed the Glen Yards site for its new hospital and the Montreal General Hospital as its complementary site. It did not suggest any alternate sites.

In the opinion of the Commission, the Glen site is a wise choice. A vast site, offering good opportunities for expansion and located near the downtown core and the Vendôme intermodal station (orange metro line and commuter train station), the Glen site can also be reached by major highways (the Ville-Marie and Decarie expressways), which corresponds to its supraregional mission. The only flaw with this site is that access roads, as well as a pedestrian link to the north, need to be built in order to make it easier to reach,. However, the MUHC and other authorities involved are well aware of the necessity of these corrective measures; the Commission concludes from its consultations that these measures do not present insurmountable obstacles.

8.2.2 INTERESTING PRELIMINARY ARCHITECTURAL PLANS

The preliminary architectural plans proposed by the MUHC for the Glen site seem very interesting. The selection of a pavilion-type construction suits the site very well; the functional distribution of buildings according to pathology and clientele makes it easy to navigate around the site. This type of construction also allows for an imaginative integration of green space.

The Commission concludes that the preliminary design proposed by the MUHC has the potential required to create a meaningful and outstanding project that is suitable for the site and program, sensitive to the quality of the space and its present urban forms, and compatible with the elaboration of a sustainable development strategy.

8.2.3 THE COMPLEMENTARY SITE AND OTHER SITES

The selection of the Montreal General Hospital as the complementary site and the distribution of activities, which includes making the MGH a major centre capable of accepting a significant portion of emergencies, seem appropriate to us.

The reuse of the buildings currently occupied by the Montreal Children's Hospital, the Royal Victoria Hospital and the Montreal Chest Institute will be addressed later in section 9.3 ("Reuse of Surplus Buildings").

CONSEQUENTLY, THE COMMISSION RECOMMENDS:

R27. That the new MUHC hospital be built on the Glen Yards site, which is an appropriate site for such facilities;

R28. That access roads be built in order to make the site easier to reach.

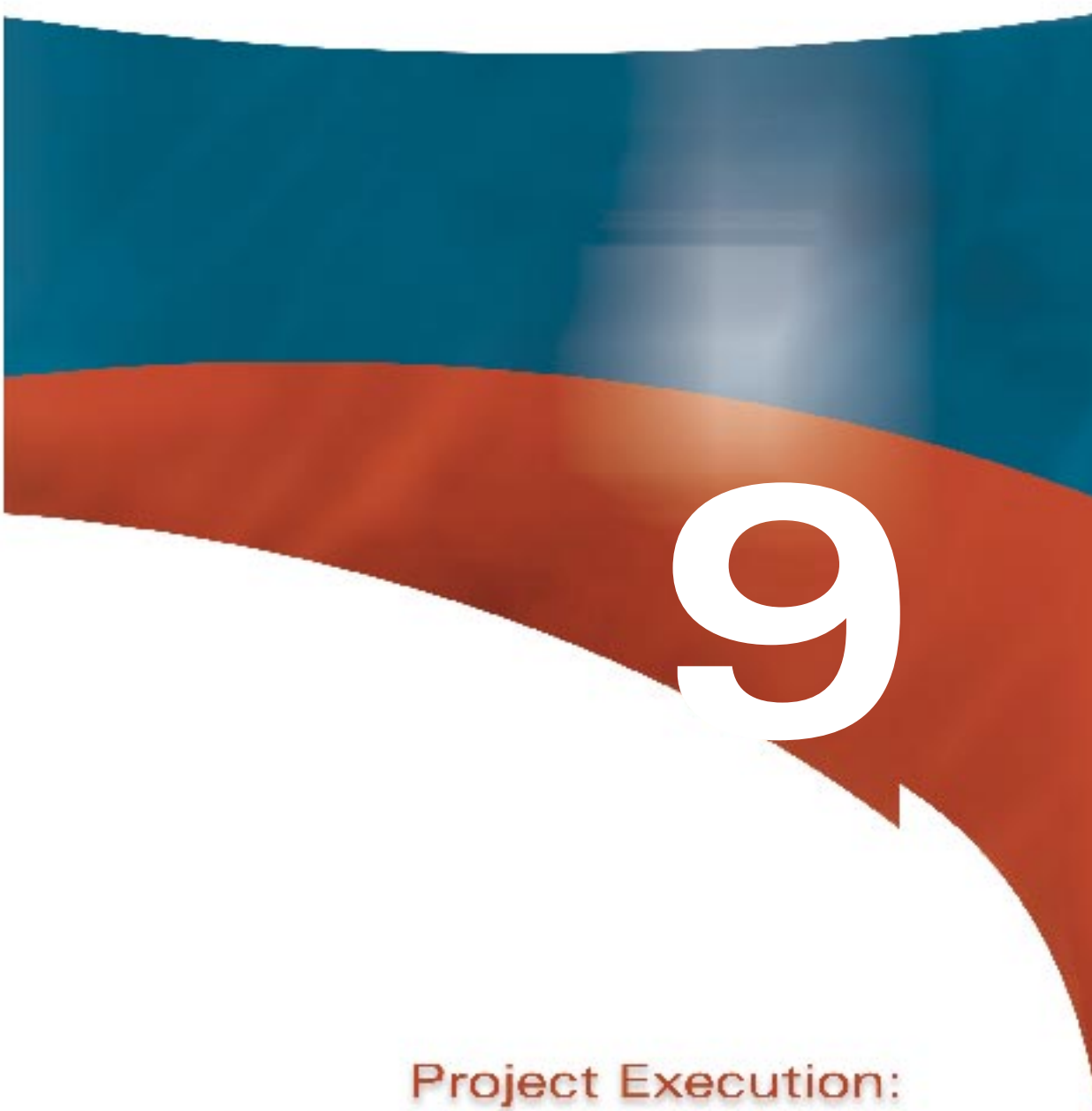
8.2.4 THE MONTREAL NEUROLOGICAL HOSPITAL: A DELICATE ISSUE

The Montreal Neurological Hospital (MNH) and the Montreal Neurological Institute (MNI) were founded by Dr. Wilder Penfield in 1934; today, they benefit from an international reputation. Not only do the MNH and MNI occupy adjacent buildings on a site that neighbours the Royal Victoria Hospital, but their activities have always been closely linked. There is international medical consensus that the close ties between the MNH and the MNI spawned their development and that this characteristic must be preserved. In fact, the MUHC planning team drew inspiration from this model by locating research facilities in close proximity to hospital facilities in its construction project at the Glen site.

The MUHC project intends to relocate the MNH to the Glen site and close the Royal Victoria Hospital. The latter currently provides non-neurological care to the patients occupying the 80 set-up beds in the MNH. The MUHC has no control over the MNI, which refuses to be relocated to the Glen site. The members of the MNI and the MNH oppose the relocation of the latter to the Glen site. Even if the MNI consented to relocate to the Glen site with the MNH, physicians at the MNI have argued that both institutions would suffer from this move, particularly because they would be far from the multidisciplinary resources offered by the McGill campus. These physicians have also mentioned the virtual impossibility of moving some of their costly equipment.

We must be sensitive to the arguments raised by the physicians of the MNH, given the past and present success of the MNH and the MNI. It is in the best interests of all Québec residents to preserve the high quality of these institutions and their international reputation. However, the health of patients must take precedence over everything else. In this regard, we must underline that the hypothesis in which the MNH would stay in its current location without benefiting from the proximity of a hospital with a more general vocation, such as the Royal Victoria Hospital, is of serious concern to medical professionals. According to the MSSS, the relocation of the MNH is unavoidable.

The Commission suggests that the MUHC, the MNH, the MNI, the MSSS and McGill University reflect on this delicate issue in order to preserve the unique and exceptional quality and character of both the Montreal Neurological Hospital and the Montreal Neurological Institute, the whole in consideration of the best interests of the population of Québec.



9

Project Execution: Cost Control and Management

9. PROJECT EXECUTION: COST CONTROL AND MANAGEMENT

Cost control and management issues represent a major challenge for any construction project of the magnitude proposed by the UHCs. The execution of two similar projects in the same city at the same time within a limited resource envelope presents several problems. For example, substantial and uncoordinated demand for the same materials or services in the context of the two construction projects could have inflationary effects.

A reading of the proposals presented by the CHUM and the MUHC in December 2003 reveals that the projects reproduce the traditional vision of two institutions that organize and plan their activities and services separately; complementarity is virtually absent as is any preoccupation with coordinated construction management.

If nothing is done to harmonize construction management, it is likely that the two institutions will continue to work separately, without any attempt at coordination. Moreover, although the planning of the two projects has not been completed, significant cost overruns are already anticipated. For this reason, in order to reduce the financial risks associated with the execution of these projects, the Commission recommends that certain measures be taken with respect to cost control and management. These measures are described below.

9.1 SINGLE MANAGEMENT CORPORATION FOR THE TWO UHCS

The CHUM and the MUHC are distinct organizations linked to two universities, each of which has a long and rich tradition. The Commission is aware of this fact and believes that the CHUM and the MUHC should each retain primary responsibility for their respective projects.

However, the budgetary context and the risks mentioned above underline the necessity for a coordinated approach to the construction of the physical facilities of the two projects.

Such coordination would offer many benefits both to the Government and Québec taxpayers as well as to the UHCs themselves. Included among such benefits would be the maximization of economies of scale and the reduction of inflationary effects associated with the simultaneous construction of two major hospitals in Montréal. It is indeed counterproductive for the Government, Québec taxpayers and the two institutions if the CHUM and the MUHC have to compete to acquire the goods and services they need to execute their respective projects. Such competition can only increase costs and possibly prolong the period required to execute the projects.

Effective coordination of the work would also maximize Québec content. By staggering the phases of the two projects properly, Québec companies can contribute to both the CHUM and the MUHC projects, thereby enhancing their experience and know-how. Without such synchronization, a company whose services are retained by one of the UHCs may not be available at the right time to participate in the work for the other UHC.

To coordinate the management of the construction of the CHUM and MUHC buildings, the Commission is therefore proposing that a single management corporation be created for both UHCs, financed from the funds earmarked for the planning and execution of the projects. This corporation would only exist while the projects are being executed. It would be headed by a chief executive officer, who would be assisted by specialists recognized for their expertise and experience, particularly in the fields of health, hospital design and construction, and the management of major projects. The management corporation's board of directors would consist of representatives from the Government, the two UHCs and possibly the foundations and universities in question, thereby ensuring a constant dialogue between the various stakeholders involved. As the Government of Québec will be providing most of the funds for these projects, it would occupy the majority of seats on the board of directors.

The overall mandate of the management corporation would essentially be to ensure that budgets and timetables are respected, that the work is synchronized, that economies of scale and Québec content are maximized and that the physical facilities of the two UHCs are complementary. The management corporation would therefore approve the budgets, schedules and technical planning of each project (including the functional and technical program and the detailed design); in each case, it would have the authority to modify any of these elements. The management corporation would also create a single framework for both projects. It would therefore prepare model documents for bids and contracts to be used by both UHCs. It could also define and manage cost verification and risk assessment processes.

9.2 BALANCING COSTS, PROGRAMS AND SCHEDULES AND OTHER FUNDAMENTAL PRINCIPLES

The success of a major capital project depends on several elements. Cost control is only one of these.

In fact, capital projects, such as the two proposed for the CHUM and the MUHC, are composed of three elements that are intricately linked. These are the program, the budget and the schedule.

The program is in fact the content of the project. The project is executed based on its functional and technical program (FTP), which is transformed into a detailed design or definitive preliminary project (DPP).

The budget is the second element. Its development begins long before the project with the FTP and is finalized with the DPP.

Lastly, the schedule, which corresponds to the duration of the execution period, must be evaluated based on the project's contracting approach.

These three elements are interdependent and must not be treated separately. If one of the elements changes, the others must be adjusted based on the priorities established. According to the experts we consulted, certain principles must be respected to reach an appropriate balance between these three elements. Without making a formal recommendation, the Commission believes it is useful to summarize these principles and strongly suggests that the MSSS, the CHUM and the MUHC take them into account in their undertakings.

9.2.1 RESOLVE THE ISSUE OF FUNDING EARLY ON IN THE PROCESS

Before getting too deeply involved in a capital project, it is important to determine how the project will be funded and at what level. In other words, the project must be defined based on the funding available and not the inverse.

This dual requirement with respect to the funding approach and level is too often ignored until significant cuts are required for the project to be completed with the funds available; this inevitably creates delays, additional costs and disappointment.

9.2.2 ADEQUATELY DEFINE NEEDS AND BUDGET

The work of defining the project remains an essential exercise in the process of executing any project of this nature. The purpose of this exercise is to ensure that the buildings correspond to the needs of the institutions and the users, particularly patients and health professionals. Users must participate at this stage of the project. If their needs are poorly assessed, underestimated or simply ignored, the budget will probably be too low. Work resulting from a redefinition of needs once execution of the project is underway is the main cause of cost overruns.

The participation of professional users (physicians, other health professionals, researchers, managers, etc.) is crucial at this stage so that once the facilities are built they will meet these users' needs and comply with generally accepted practices. User participation at this early stage of the process may sometimes be difficult to achieve. This is an issue that should be addressed and resolved in the case of the CHUM and MUHC projects. The involvement of professional users in defining their needs is so important that it is recommended that they sign the section of the FTP that concerns them, thereby increasing their sense of responsibility with respect to this issue.

It is therefore important to maximize the intellectual content of the projects before beginning construction, since the more the projects are thought out, planned and detailed before construction begins, the better are their chances of being completed within budget. We also recommend that the content of the project be "frozen" before beginning construction in order to control costs, since changes in orientation once execution of the project is underway are usually costly. This freeze does not imply a complete absence of flexibility once construction begins. On the contrary, one of the fundamental qualities of the chosen design must be its ability to adapt both during and after construction, namely to be able to adjust to technological changes as well as to changes in methods of dispensing health care.

Moreover, the budget must be realistic. If it is underestimated with regard to the needs of future users, it will certainly not be respected. Cuts that take place once execution of the project is underway will most often affect its quality and value. According to the experts consulted, savings generated by eliminating elements often represent 50% of their actual value.

9.2.3 HAVE REALISTIC CONTINGENCIES ADAPTED TO THE TYPE OF PROJECT

As mentioned previously, although the designs selected for the CHUM and MUHC projects must be as flexible as possible, realistic contingencies must also be provided, given the nature of these projects. The designers must take into account the possible impact of changing technology with respect to the space and services required for medical equipment, as the latter represents substantial costs for both projects.

9.2.4 PREPARE A RISK MANAGEMENT PLAN AND UPDATE IT DURING PROJECT EXECUTION

To produce a risk management plan, a risk analysis should be conducted before and during the execution of the project, since certain risks are liable to disappear while others will appear. Large projects often fail because risk analysis is either absent or insufficient.

9.2.5 SELECT A CONTRACTING APPROACH ADAPTED TO THE PROJECT AND ITS CHALLENGES

Selecting the best contracting approach for the projects should be part of the UHCs' planning exercise. There is a large variety of contracting approaches. We discussed one of these in subsection 7.2.4, namely public-private partnerships. At this stage, the Commission believes that the projects are not advanced enough to identify the optimal contracting approach for the construction of the two UHCs.

AS FOR COST CONTROL AND MANAGEMENT WITH RESPECT TO PROJECT EXECUTION, THE COMMISSION RECOMMENDS:

R29. That a single management corporation be created for both UHCs, whose role would essentially be to ensure that budgets and timetables are respected, that the work is synchronized, that economies of scale and Québec content are maximized and that the physical facilities of the two centres are complementary.

9.3 REUSE OF SURPLUS BUILDINGS

The Commission analyzed the proposals submitted by the two UHCs concerning the reuse of buildings rendered surplus by the construction of new facilities. The reuse scenarios proposed by the UHCs are obviously very preliminary, so it is difficult for the Commission to make a definitive judgment about them. Evidently, additional work is necessary on this front. There are also legal constraints arising from the ARHSSS for example, not to mention restrictions imposed by various donors at various times that may affect the disposal of surplus buildings. In addition, the administrative practices of the Government of Québec could limit the institutions' right to dispose of these sites for purposes other than public health. The Commission endorses the government objective of maximizing the use of existing buildings and securing a return on the investments already made, while at the same time pursuing objectives of quality and adaptability for the future. In this respect, it is useful to provide a historical overview of the situation and to highlight certain significant issues in the search for appropriate reuse projects.

9.3.1 HISTORICAL OVERVIEW OF UHC BUILDINGS

Several UHC buildings suffer from functional and technical obsolescence. These buildings, some of which date back to the 19th or early 20th century, were built for traditional hospitalization and do not meet the technological demands for outpatient services required by modern medicine. The teaching mission of UHCs also generally requires larger classrooms; several existing UHC buildings do not meet this criterion. Moreover, the multiple extensions built on these complexes over the last few decades mean that the present form of the current UHC facilities is inadequate on a functional, architectural and electromechanical level.

The authorities responsible for the UHCs decided to move into new facilities a long time ago. While the preliminary plans were being studied to define the new UHCs, each of the UHCs also worked on scenarios for the disposal of surplus buildings, while taking into account the government requirement of maintaining a complementary downtown site.

9.3.2 ISSUES AND GUIDELINES WITH RESPECT TO REUSE

Certain issues guided the Commission's analysis, including:

- the cost of maintaining abandoned buildings, their loss of value due to deterioration and other risks generally associated with unoccupied buildings;
- the return on the money already invested in buildings that could become surplus space, particularly when it can be anticipated that these buildings will not have reached the end of their life cycle when the new facilities open or for which the debt will not have been paid off yet;
- the heritage value of the buildings relative to their architectural character or location;
- the impact on the urban fabric, the population and neighbourhood in question, as well as environmental aspects;
- the opportunity to provide Montréal with structuring projects;
- the priority to be given to public projects;
- the transparency of the disposal process.

The reuse of the two UHCs' surplus buildings represents a major challenge. On the one hand, it is difficult, if not impossible, to sell many of them to the private sector due to the obsolescence of the buildings, legal and administrative constraints and the heritage value of some of them. On the other hand, maintaining them for public health or other public purposes would involve additional costs to taxpayers.

9.3.3 CHUM: EXISTING BUILDINGS AND REUSE

The CHUM currently has three sites: Hôpital Saint-Luc, Hôpital Notre-Dame and Hôtel-Dieu de Montréal. These buildings have a total surface area of 289,290 m2. More specific data concerning these sites appear in Appendix 5. Before establishing reuse scenarios for these buildings, the location of the new CHUM facilities must first be decided. Such a decision would determine which buildings will become surplus space, thereby concluding the planning work. The Commission recommends that the new CHUM facilities be located at 1000 Saint-Denis Street and that Hôpital Notre-Dame become the complementary downtown hospital. If this recommendation is followed, the question of how to reuse the vast facilities of Hôpital Notre-Dame becomes moot.

In either scenario, Hôtel-Dieu de Montréal would be considered surplus space. The Commission is of the opinion that, given the history and location of Hôtel-Dieu de Montréal, it should continue to be used for public health and other public purposes. This site could serve to bring together some of the public health, academic and administrative activities of the health care network. For example, the Agency, the MSSS and the universities could integrate all Montréal public health activities within the Hôtel-Dieu de Montréal site. Such an orientation would ensure the protection of this heritage site while maintaining the dynamism of this downtown area.

The steps undertaken by the CHUM demonstrate that the reuse of surplus buildings is a priority. Although it is too early in the process to issue any recommendations, the Commission is of the opinion that the CHUM is on the right track in seeking a solution for all of its potential surplus buildings at the same time as its new facilities are being built. Approaching this issue early on means benefiting from the next few years to create opportunities and to decide on the best possible scenarios.

9.3.4 MUHC: EXISTING BUILDINGS AND REUSE

The MUHC has five sites: the Montreal General Hospital, the Montreal Children's Hospital, the Royal Victoria Hospital, the Montreal Neurological Hospital and the Montreal Chest Institute. The MNH buildings belong to McGill University. The MUHC buildings have a total surface area of 300,842 m2. More specific data concerning these sites appear in Appendix 6.

The MUHC has held consultations and established the Reuse Committee to find new owners and new vocations for its surplus buildings. This committee first worked on establishing a framework that would properly orient the reuse process. The MUHC suggested several preliminary guidelines for the reuse of its surplus buildings. As with the CHUM, the reuse scenarios are not sufficiently advanced for the Commission to issue any specific recommendations.

Given the heritage value and location of the MUHC's existing facilities, the Commission recommends that these facilities, particularly those located on Mount Royal, continue to be used for public purposes. These facilities may be too big to be used solely by the health care network. In this case, it would be appropriate for Montréal's universities to benefit from their use (assuming that McGill University would probably be interested in certain buildings because of their location).

The cost of renovating the surplus CHUM and MUHC buildings maintained for public health purposes could be substantial. Ministerial authorities should include these future investments in capital programs to earmark the amounts required as of 2010. The reuse of these buildings falls not only under the jurisdiction of the institutions but also of the Agency and the MSSS. The Commission believes there is a net advantage in these bodies jointly planning for the reuse of the property left vacant by the two UHCs. Such collaboration would enable a wider vision of the needs and possibilities for reuse.

In order to limit the costs associated with the maintenance of empty buildings, this joint planning should start as soon as possible and certainly as soon as the parameters for the execution of the new UHC buildings have been finalized. Any surplus property not kept for public health purposes or for the universities should be disposed of as quickly as possible to maximize its value.

WITH RESPECT TO POTENTIAL SURPLUS BUILDINGS, THE COMMISSION RECOMMENDS:

R30. That the UHCs, the Agency and the MSSS jointly plan for the reuse of the surplus property;

R31. That priority be given first to public health needs and then to the needs of Montréal's universities;

R32. That this process be started as soon as possible and certainly as soon as the parameters for the execution of the new UHC buildings have been finalized;

R33. That any surplus property not kept for public health purposes or for the universities be disposed of as quickly as possible.

10

Conclusion

10. CONCLUSION

The Commission concludes that the projects submitted by the CHUM and the MUHC are necessary and constitute a major contribution to the enhancement of academic medicine in Québec. However, certain aspects of these projects need to be reviewed and modified in order to comply with the parameters and conditions established by the Government of Québec. Subject to these modifications being made to the satisfaction of the Government of Québec, the Commission recommends that the latter authorize and encourage the execution of these projects.

11

List of Recommendations

11. LIST OF RECOMMENDATIONS

R1. That all UHC medical personnel participate in clinical, teaching and research activities, to be exer cised in accordance with the variable proportions and conditions of given individuals;

R2. That the UHCs further develop their project to enhance academic medicine based on excellence and innovation in the following five spheres:

- clinical care ;
- teaching ;
- research ;
- medical health technology assessment ;
- management ;

R3. That the UHCs define more clearly the goals to be achieved once the new facilities open as regards the enhancement of academic medicine;

R4. That a sufficient number of beds be provided for highly specialized care at the CHUM (175 beds in 2010) and the MUHC (142 beds in 2010) in order to respond to the increasing demand for these services due, among other things, to the aging of the population, and therefore that the number of general and specialized beds be reduced;

R5. That the number of beds for highly specialized care then be increased at the CHUM and the MUHC in order to comply with the MSSS position statement regarding highly specialized services; the UHCs, RUIS, MSSS and universities would determine the appropriate number of beds and their order;

R6. That the CHUM and the MUHC integrate as much flexibility as possible into their respective projects in order to be able to adapt over the years to the needs of the population for highly specialized care;

R7. That the two UHCs allow a central and explicit role for human resources in their respective projects with regard to all personnel affected by this important change particularly with regard to recruiting and retaining top-flight specialists and researchers;

R8. That the regional and provincial medical staffing plans give greater consideration to the UHCs' need for top medical specialists and researchers who will fulfill UHC teaching and research responsibilities;

R9. That a formal agreement regarding a practice plan be reached in each UHC at the latest before bids are solicited for the construction of the new facilities;

R10. That the joint proposal of the CHUM and the MUHC providing a process for reaching complemen tarity between them be favourably received;

R11. That the CHUM and the MUHC be asked to enter into a formal full and detailed agreement in order to eliminate duplication and to achieve true complementarity between the two UHCs with regard to the following care and services in particular:

- tertiary and quaternary services, particularly those affecting small numbers of patients, for whom a single combined program would be appropriate;
- diagnostic services (activities and equipment);
- administrative and support services;

Such an agreement should provide, for each such service, the results to be achieved in terms of complementarity as well as a timetable for implementation;

R12. That the specialized and highly specialized services offered by the UHCs and their partners in their respective RUIS be examined in order to eliminate unnecessary duplication and to ensure an optimal deployment of resources;

R13. That a planned joint approach be developed to manage the foreseeable impact on human resources of the complementarity agreements entered into by the UHCs;

R14. That the savings generated by pooling resources, eliminating duplication and achieving complementarity be retained by the UHCs;

R15. That the CHUM review its project design for the 6000 Saint-Denis Street site, in the event that it decides to build its new facilities at this location, so that it fits within the resource envelope and to this end that it consider the possibility of:

- reducing the number of beds in the new hospital to between 500 and 550, therefore increasing the number of beds in the downtown complementary hospital; and
- seeking further assistance from the federal government, the foundations and the private sector;

R16. That the CHUM review its project design so that it fits within the resource envelope and to this end that it consider the possibility of:

- reducing the number of beds in the new hospital to between 500 and 550, therefore increasing the number of beds at the complementary downtown hospital, in this case Hôpital Notre-Dame; and
- seeking further assistance from the federal government, the foundations and the private sector;

R17. That the MUHC review its project design so that it fits within the resource envelope and to this end that it consider the possibility of:

- reducing the number of beds in the new hospital to between 500 and 550, therefore increasing the number of beds in the Montreal General Hospital; and
- seeking further assistance from the federal government, the foundations and the private sector;

R18. That both institutions examine, together with other alternatives, the use of public-private partnerships to perform appropriate non-clinical activities at a lower cost and that they justify their eventual choice of method;

R19. That the UHCs be given a specific incentive-based budget to maintain, consolidate and develop tertiary and quaternary activities, teaching and research;

R20. That the resource envelope for highly specialized care be separately identified as well as indexed and allocated according to the ministerial guidelines regarding the concentration of these activities in UHCs;

R21. That support be given to the development of associated medical clinics in order for them to offer certain general and specialized activities in compliance with the same standards of quality as are practised in hospital centres;

R22. That general and specialized activities that do not need to be offered by the UHCs be identified and transferred to associated medical clinics, which would have to provide these services in compliance with the same standards of quality and accessibility as are practised in hospital centres;

R23. That the appropriate financial framework be determined to support the development or consolidation of associated medical clinics;

R24. That the new CHUM facilities not be built at 6000 Saint-Denis Street given the constraints that characterize the site and render it undesirable for such buildings;

R25. That the CHUM opt for the 1000 Saint-Denis Street site as the location of its new facilities;

R26. That Hôpital Notre-Dame be used as the complementary site;

R27. That the new MUHC hospital be built on the Glen Yards site, which is an appropriate site for such facilities;

R28. That access roads be built in order to make the site easier to reach;

R29. That a single management corporation be created for both UHCs, whose role would essentially be to ensure that budgets and timetables are respected, that the work is synchronized, that economies of scale and Québec content are maximized and that the physical facilities of the two centres are complementary;

R30. That the UHCs, the Agency and the MSSS jointly plan for the reuse of the surplus property;

R31. That priority be given first to public health needs and then to the needs of Montréal's universities;

R32. That this process be started as soon as possible and certainly as soon as the parameters for the execution of the new UHC buildings have been finalized;

R33. That any surplus property not kept for public health purposes or for the universities be disposed of as quickly as possible.

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Appendix

APPENDIX 1

LIST OF ABBREVIATIONS AND ACRONYMS

Agency: Agence de développement de réseaux locaux de services de santé et de services sociaux de Montréal

ALOS: Average length of stay

ARHSSS: An Act respecting health services and social services

AUHC: Affiliated university hospital centre

AUC: Affiliated university centre

CFI: Canada Fund for Innovation

CHSGS: General and specialized hospital centre

CHSLD: Residential and long-term care centre

CHUM: Centre hospitalier de l'Université de Montréal

CLSC: Local community service centre

DPP: Definitive preliminary plans

FTP: Functional and technical program

GDP: Gross domestic product

HC: Hospital centre

IRCM: Institut de recherche clinique de Montréal

MCH: Montreal Children's Hospital

MCI: Montreal Chest Institute

MGH: Montreal General Hospital

MHI: Montreal Heart Institute

MNH: Montreal Neurological Hospital

MNI: Montreal Neurological Institute

MSSS: Ministère de la Santé et des Services sociaux

MUHC: McGill University Health Centre

MUHC-DC: McGill University Hospital Centre Development Corporation

PPP: Public-private partnership

R&D: Research and development

RUIS: Integrated university health network

RVH: Royal Victoria Hospital

SARS: Severe Acute Respiratory Syndrome

SICHUM: Société d'implantation du Centre hospitalier de l'Université de Montréal

STM: Société de transport de Montréal

UHC: University hospital centre

UI: University institute

UQÀM: Université du Québec à Montréal

APPENDIX 2

BREAKDOWN OF HOSPITALIZATIONS BASED ON CARE LEVEL

NUMBER OF HOSPITALIZATIONS BY LEVEL

Year	Level I	Level II	Level III	Total
1999	556 969	134 356	45 971	737 296
2000	519 554	131 680	48 635	699 869
2001	533 033	130 763	43 796	707 592
2002	513 121	129 144	45 364	687 629

AS A PERCENTAGE OF THE TOTAL

1999	75,6	18,2	6,2	100
2000	74,2	18,8	7,0	100
2001	75,3	18,5	6,2	100
2002	74,6	18,8	6,6	100

Source: Report by Eckler Partners Ltd.

APPENDIX 3

BREAKDOWN OF TERTIARY CARE IN QUÉBEC HOSPITAL CENTRES

NUMBER OF TERTIARY CASES BY HC

Hospital Centre	1999	2000	2001	2002
Laval (Québec)	6727	7071	6964	7730
MHI	4745	5292	5352	5774
MUHC	6431	6156	5849	5677
CHUM	5249	5396	5162	4813
UHC	2292	2473	2783	2923
CHUQ	2524	2767	2697	2710
Sainte-Justine	2554	2792	2441	2501
Jewish General	1879	1942	1896	2257
Sacré-Coeur	2071	2211	2136	2131
Maisonneuve-Rosemont	1891	1948	1916	1975
Chicoutimi (Sagamie)	1123	1187	1214	1273
Sub-total	37 486	39 235	38 410	39 764
Total tertiary cases	45 971	48 635	43 796	45 364

NUMBER OF CASES AS A % OF THE ANNUAL TOTAL

Hospital Centre	1999	2000	2001	2002
Laval (Québec)	14,63	14,54	15,90	17,04
MHI	10,32	10,88	12,22	12,73
MUHC	14,00	12,66	13,35	12,51
CHUM	11,43	11,10	11,79	10,61
UHC	4,98	5,08	6,35	6,44
CHUQ	5,49	5,68	6,16	5,98
Sainte-Justine	5,56	5,74	5,57	5,51
Jewish General	4,09	3,99	4,33	4,98
Sacré-Coeur	4,51	4,55	4,88	4,70
Maisonneuve-Rosemont	4,11	4,01	4,37	4,35
Chicoutimi (Sagamie)	2,44	2,44	2,77	2,81
Sub-total	81,56	80,67	87,69	87,66
Total tertiary cases	100	100	100	100

Source: Report by Eckler Partners Ltd.

APPENDIX 4

BREAKDOWN OF COSTS

1. UHC	CHUM-6000 700 beds - 275 181 m²		CHUM-1000 650 beds - 253 476 m²		MUHC 608 beds - 219 098 m²	
	Institution	Commission	Institution	Commission	Institution	Commission
1.1 Site Acquisition						
1.1.1 Real estate transaction					$18 000 000	$18 000 000
1.1.2 Expropriation						
1.1.3 Occupant relocation	$110 000 000	$110 000 000	$4 939 000	$7 439 000	$4 100 000	$9 883 017
1.1.4 Demolition	$3 166 163	$3 166 163	$23 387 398	$23 387 398		
1.1.5 Decontamination	$9 206 191	$9 206 191	$9 000 000	$9 000 000	$35 000 000	$35 000 000
Sub-total:	$122 372 354	$122 372 354	$37 326 398	$39 826 398	$57 100 000	$62 883 017
1.2 Buildings						
1.2.1 Basic work	$618 547 043	$633 166 018	$637 353 050	$613 930 086	$673 464 000	$512 973 206
1.2.2 Design contingencies		$63 316 602		$61 393 009	incl. in 1.2.1	$51 297 321
1.2.3 Construction contingencies	$51 258 705	$34 824 131	$55 579 271	$67 532 309	incl. in 1.2.1	$28 213 526
1.2.4 General site conditions	incl.	$62 161 074	incl.	$63 142 709	incl. in 1.2.1	$50 361 144
1.2.5 Construction management	$44 424 211	$23 804 035	$48 168 702	$24 179 943	incl. in 1.2.1	$19 285 356
cost / m²:	$2 595	$2 970	$2 924	$3 275	$3 074	$3 022
1.2.6 Professional fees	$51 258 705	$98 072 623	$55 579 271	$99 621 367	$102 713 000	$79 455 666
1.2.7 Artwork	$3 417 247	$4 128 859	$3 705 285	$4 193 390	$0	$3 353 153
Sub-total:	$768 905 911	$919 473 342	$800 385 579	$933 992 814	$776 177 000	$744 939 373
1.3 Site Works						
1.3.1 Basic work		$6 879 459		$991 988		$19 164 171
1.3.2 Design contingencies		$687 946		$99 199		$1 916 417
1.3.3 Construction contingencies		$151 348		$21 824		$421 612
1.3.4 General site conditions		$578 906		$83 476		$1 612 665
1.3.5 Construction management		$248 930		$35 895		$693 446
1.3.6 Professional fees		$1 025 591		$147 886		$2 856 997
Sub-total:	$2 530 000	$9 572 180	$1 316 500	$1 380 267		$26 665 308
1.4 Information Technology						
1.4.1 Information systems						
1.4.2 Purging & digitizing active files						
1.4.3 Telephone systems						
1.4.4 Telecommunication						
Sub-total:	$58 493 049	$112 500 000	$58 493 049	$112 500 000	$58 072 000	$112 500 000
1.5 Equipment / Furniture						
1.5.1 Clinical equipment	$131 525 865	$155 300 000	$131 525 865	$155 300 000	$81 000 000	$167 800 000
1.5.2 Support equipment	$20 937 408	$20 937 408	$20 937 408	$20 937 408	$0	$20 000 000
1.5.3 Furniture	$22 161 781	$22 161 781	$22 161 781	$22 161 781	$19 000 000	$19 000 000
1.5.4 Research centre	$51 078 145	$51 078 145	$51 078 145	$51 078 145	$41 000 000	$41 000 000
Sub-total:	$225 703 199	$249 477 334	$225 703 199	$249 477 334	$141 000 000	$247 800 000
1.6 Infrastructures						
1.6.1 Public services	$5 000 000	$5 000 000	$20 000 000	$20 000 000	$0	$0
1.6.2 Temporary re-routing	$0	$2 000 000			$20 020 000	$54 000 000
1.6.3 Metro tunnel, etc.	$0	$42 500 000	$0	$2 500 000	$0	$2 800 000
Sub-total:	$5 000 000	$49 500 000	$20 000 000	$22 500 000	$20 020 000	$56 800 000
1.7 Administrative Fees						
1.7.1 Staff training (replacement)	incl. in 1.7.6	$14 000 000	incl. in 1.7.6	$13 000 000	incl. in 1.7.6	$12 160 000
1.7.2 Commissioning	incl. in 1.7.6	$2 400 000	incl. in 1.7.6	$2 400 000	incl. in 1.7.6	$2 400 000
1.7.3 Relocation	incl. in 1.7.6	$6 000 000	incl. in 1.7.6	$6 000 000	$16 485 000 $	$6 000 000
1.7.4 SICHUM / MUHC-DC	$0	$32 714 289	$0	$32 714 289	$0	$22 114 937
1.7.5 UHC management tea 2003/2004	$0	$1 500 000	$0	$1 500 000	$0	$1 500 000
1.7.6 UHC team 2004/2010	$13 500 000	$15 000 000	$13 500 000	$15 000 000	$30 000 000	$15 000 000
Sub-total:	$13 500 000	$71 614 289	$13 500 000	$70 614 289	$46 485 000	$59 174 937
Total UHC:	**$1 196 504 513**	**$1 534 509 499**	**$1 156 724 725**	**$1 430 291 102**	**$1 098 854 000**	**$1 310 762 635**

	CHUM-6000		CHUM-1000		MUHC	
	700 beds - 275 181 m²		650 beds - 253 476 m²		608 beds - 219 098 m²	
	Institution	Commission	Institution	Commission	Institution	Commission
2. Complementary Site (downtown)						
2.1 Renovations/Redevelopment						
2.1.1 Basic work	$33 928 480	$33 928 480	$45 565 000	$45 565 000		
2.1.2 Contingencies	$5 089 272	$5 089 272	$6 834 750	$6 834 750		
2.1.3 Professional fees	$5 462 485	$5 462 485	$7 335 965	$7 335 965		
2.1.4 Continued operations	$8 000 000	$8 000 000	$10 000 000	$10 000 000		
Sub-total:	$52 480 237	$52 480 237	$69 735 715	$69 735 715	$0	
2.2 Information Technology	$0	$0	$0	$0	$0	
2.3 Equipment / Furniture	$0	$0	$0	$0	$0	
Complementary site total:	**$52 480 237**	**$52 480 237**	**$69 735 715**	**$69 735 715**	**$0**	**$52 105 000**
3. Surplus Sites						
3.1 Work/Demolition	$0	$0	$0	$0	$0	$0
3.3 Professional fees	$0	$0	$0	$0	$0	$0
3.4 Continued Operations / Transition	$0	$5 860 000	$0	$865 000	$0	$2 420 000
Surplus sites total:	**$0**	**$5 860 000**	**$0**	**$865 000**	**$0**	**$2 420 000**
Cost 2004-Q1	**$1 248 984 750**	**$1 592 849 736**	**$1 226 460 440**	**$1 500 891 817**	**$1 098 854 000**	**$1 365 287 635**
GST & QST	non disponible		non disponible		non disponible	
Cost spreading 2004-2010		$159 284 974		$225 133 772		$136 528 763
Project cost 2004-2010		$1 752 134 709		$1 726 025 589		$1 501 816 398
4 CHUM/MUHC/Network or PPP Complementarity						
4.1 Services alimentaires	to be evaluated	to be evaluated	to be evaluated	to be evaluated	to be evaluated	to be evaluated
4.2 Laundry	to be evaluated	to be evaluated	to be evaluated	to be evaluated	to be evaluated	to be evaluated
4.3 Heating	to be evaluated	to be evaluated	to be evaluated	to be evaluated	to be evaluated	to be evaluated
4.4 Parking						
4.4.1 Basic work		$60 575 940		$98 675 662		$59 964 195
4.4.2 Design contingencies		$6 057 594		$9 867 566		$5 996 420
4.4.3 Construction contingencies		$1 332 671		$2 170 865		$1 319 212
4.4.4 General site conditions		$5 097 465		$8 303 557		$5 045 987
4.4.5 Construction management		$2 191 910		$3 570 529		$2 169 774
4.4.6 Professional fees		$9 030 670		$14 710 582		$8 939 471
Total:	**$45 000 000**	**$84 286 250**	**$50 000 000 $**	**$137 298 761**		**$83 435 059**
Total in UHC report Dec. 2003:	**$1 293 984 750**		**$1 276 460 440**		**$1 098 854 000**	
5. LEED Certification (building, parking & landscaping)		$60 552 175		$64 108 707		$51 101 195

APPENDIX 5

DESCRIPTION OF EXISTING CHUM BUILDINGS

	St-Luc	Notre-Dame	Hôtel-Dieu	Total
1. Number of parking spaces	487	838	732	2 057
2. Pavillons	5	9	8	22
3. Land, surface area (m^2)	23 964	45 959	33 563	103 486
4. Buildings, surface area (m^2)	86 847	133 314	69 129	289 290
5. Real estate appraisal - land	$9,6 M	$8,3 M	$9,3 M	$27,2 M
6. Real estate appraisal – buildings	$64,7 M	$121,8 M	$39,8 M	$226,3 M
7. Total 6+7: Property appraisal	$74,3 M	$130,1 M	$49,1 M	$253,5 M
8. In lieu of taxes (2004	$1,3 M	$2,2 M	$0,8 M	$4,3 M

Sources: Ministère des Affaires municipales, du Sport et du Loisir du Québec; Agence de développement des réseaux locaux de santé et de services sociaux de Montréal, CHUM, BPR Report.

APPENDIX 6

DESCRIPTION OF EXISTING MUHC BUILDINGS

	MGH	MCH	RVH	MCI	MNH	Total
1. Number of parking spaces	1 100	838	1 200	92	16	3 246
2. Pavillons	12	7	12	4	5	40
3. Land, surface area (m^2)	48 699	14 081	141 645	5 600	5 900	215 925
4. Buildings, surface area (m^2)	102 211	47 265	110 570	15 109	25 687	300 842
5. Real estate appraisal – land	$13,2 M	$6,5 M	$17,3 M	$1,8 M		$38,8 M
6. Real estate appraisal – buildings	$69,7 M	$27,6 M	$74,3 M	$8,5 M		$180,1 M
7. Total 6+7: Property appraisal	$82, 9 M	$34,1 M	$91, 8 M	$10, 3 M		$219,1 M
8. In lieu of taxes	$1,4 M	$0,6 M	$1,6 M	$0,2 M		$3,8 M

Sources: Ministère des Affaires municipales, du Sport et du Loisir du Québec; Agence de développement des réseaux locaux de santé et de services sociaux de Montréal, MUHC, Roy-LGL Report.

APPENDIX 7

LIST OF EXPERTS (MANDATED AND CONSULTED)

ABCP architecture + urbanisme

André Ibghy Architecte

Beauchemin, Bouchard et Associés inc,

Bélanger, Vianney

Bordeleau, Luc

Bourbonnais, Pierre-Paul

BPR Groupe Conseil

Champagne, François, Ph.D.

Contandriopoulos, André-Pierre, Ph.D.

Constantineau, Francine

Daoust Lestage inc.

Demers, Robert, Ph.D.

Denis, Jean-Louis, Ph.D.

Derome, Denis, Ing., M.Sc.A

Eckler associés ltée

Gerbier, Marion

Groupe HBA experts-conseils s.e.n.c.

Groupe Pomerleau

InfoVeille Santé ltée

Lamothe, Lise, Ph.D.

Legros, Guy, M.D.

Lemieux, Renald, M.Ing., Ph.D.

Martin, Patrick

Michel Lemoine, expert-conseil

Morin, Jean E., M.D.

Poirier, Claude, Ing., M.D., M.Sc.

Provencher, Pierre

Roche construction

Rochon, Jean, LL, M.D., Ph.D.

Roy LGL

Saint-Cyr, Michel

Tran, Thu-cuc T.

Trottier, Louise-Hélène, Ph.D.

APPENDIX 8

LIST OF EXPERT REPORTS

1. CHAPTER 4 – A VISION FOR THE FUTURE

Les grandes tendances et enjeux des centres hospitaliers universitaires de demain : une synthèse, InfoVeille Santé ltée, February 2004.

2. CHAPTER 5 – ENHANCEMENT OF ACADEMIC MEDICINE

Les enjeux du développement de la médecine académique, B.E.S.T (Groupe de recherche interdisciplinaire en santé), Department of Health Administration, Université de Montréal, February 2004.

3. CHAPTER 7 – THE FINANCIAL FRAMEWORK: Capital Costs

- *Superficies – coûts de construction – échéanciers,* Roche Construction, ABCP architecture+urbanisme, André Ibghy Architect, Groupe HBA experts-conseils s.e.n.c., Groupe Pomerleau, March 2004.
- *Technologies de l'information, des télécommunications et de la téléphonie,* Beauchemin, Bouchard et Associés Inc., February 2004.
- *Équipements médicaux spécialisés et du mobilier,* Lemieux, Renald, and Delorme, Denis, March 2004.

4. CHAPTER 7 – THE FINANCIAL FRAMEWORK: Operating Costs

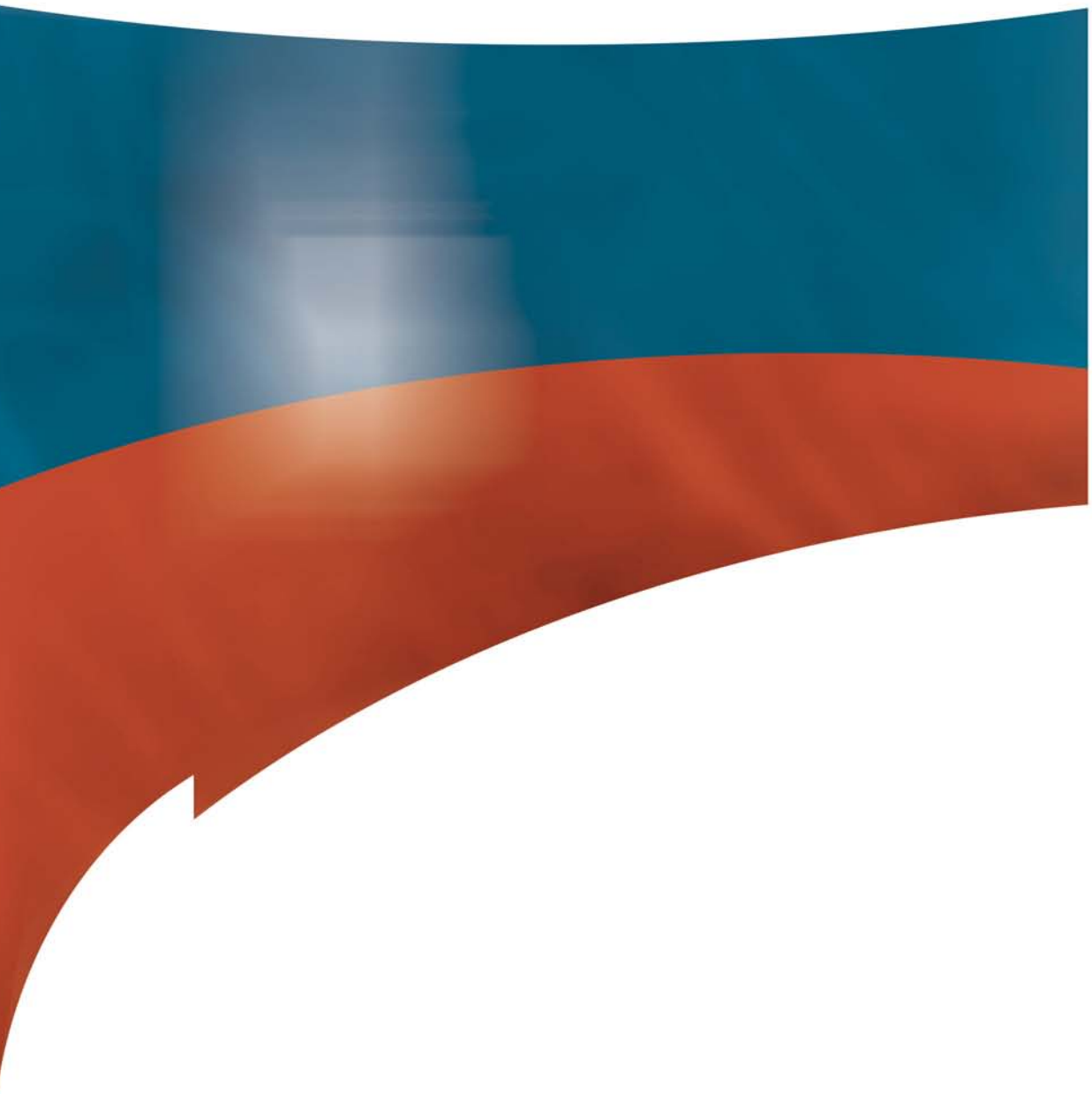
Budgets d'opération, soins tertiaires, Eckler Partners Ltd., February 2004.

5. CHAPTER 8 – UHC SITE LOCATIONS

Impacts sur la trame urbaine des sites projetés, Daoust Lestage Inc., February 2004.

6. CHAPTER 9 – COST CONTROL AND MANAGEMENT

Contrôle des coûts, Michel Lemoine expert-conseil, February 2004.
Réutilisation des bâtiments excédentaires: CHUM, BPR, February 2004; CUSM, Roy-LGL, February 2004.



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