American University of Beirut

Medicine Strategic Plan

Overview

September 2008
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents</td>
<td>2</td>
</tr>
<tr>
<td>I. Our Legacy</td>
<td></td>
</tr>
<tr>
<td>A. The Early Years</td>
<td>3</td>
</tr>
<tr>
<td>B. Years of Growth</td>
<td>4</td>
</tr>
<tr>
<td>C. A Change of Course</td>
<td>5</td>
</tr>
<tr>
<td>D. Back to Course</td>
<td>5</td>
</tr>
<tr>
<td>Mission Statements</td>
<td>8</td>
</tr>
<tr>
<td>II. Strategic Plan Overview</td>
<td>9</td>
</tr>
<tr>
<td>A. Education</td>
<td>10</td>
</tr>
<tr>
<td>B. Research</td>
<td>13</td>
</tr>
<tr>
<td>C. Patient Care</td>
<td>16</td>
</tr>
<tr>
<td>People Excellence</td>
<td>16</td>
</tr>
<tr>
<td>Best Practices in Medicine</td>
<td>18</td>
</tr>
<tr>
<td>Enabling Facilities</td>
<td>22</td>
</tr>
<tr>
<td>State-of-the-Art Technologies</td>
<td>23</td>
</tr>
<tr>
<td>Finance</td>
<td>23</td>
</tr>
<tr>
<td>Outreach</td>
<td>24</td>
</tr>
<tr>
<td>Marketing</td>
<td>25</td>
</tr>
<tr>
<td>Appendices</td>
<td></td>
</tr>
<tr>
<td>Organizational Chart</td>
<td>26</td>
</tr>
<tr>
<td>Summary of faculty contribution with financial implications</td>
<td>27</td>
</tr>
<tr>
<td>Proposed linkages of Medicine with all University units and discipline consolidation</td>
<td>28</td>
</tr>
<tr>
<td>Summary of the Financial Tables</td>
<td>29</td>
</tr>
</tbody>
</table>
American University of Beirut

Medicine Strategic Plan

Overview

I. Our Legacy

A. The Early Years

In 1867 a medical school was established at the Syrian Protestant College (SPC) in Beirut, Syria, one year after the opening of the College itself. This was a unique and pioneering endeavor in the region. It represented the recognition, on the part of the founders of the College, of the critical importance of higher medical education, training, and health care for the people of Lebanon and Syria.

In the years leading up to 1900, the foundations for excellence were laid by pioneering medical educators at the SPC, who defined and developed the medical programs. This generation of doctor/scientists changed the face of medical education and health care in the region and prepared the ground for new opportunities and growth. Excellence was expressed in setting the foundation and building up a structure with a critical mass of people that allowed it to consolidate itself and grow. Initially the faculty and students used many hospitals in Beirut. In 1871 they moved into one Hospital, the Saint John’s Hospital, located near the current AUB campus. By 1900, the structures of the medical school, embodying the concepts of American Medical Education and Health Care, were in place. The institution was ready for a qualitative leap forward.

The successes of these early years, resulted a century ago (1900-1910), in the establishment of the first Medical Center in the region that included, in addition to the School of Medicine whose first building was completed in 1873, schools of Pharmacy (1871), Nursing (1905), and Dentistry (1910), as well as 3 Hospitals: Maternity and Women’s (1908), Eye and Ear (1909), and the Children’s and Orthopedic surgery (1910), later combined into a 200 bed hospital complex. Dale Home was later built to house the School of Nursing in 1925.

An old postcard showing two of the three original hospital buildings built between 1908 and 1910 on the old Adham property across the street from the Medical Gate. (Dorman Collection)
B. Years of Growth

The period that followed (1910-1975) was marked by rapid growth in many areas. In 1920 the SPC became the American University of Beirut (AUB). Standards for the admission of medical students were set according to the standards of the American Medical Association. Networking with other institutions started through medical conferences as of 1913. The School of Nursing graduated the first students who later became the nursing service at the Hospital. The first Middle East Medical Assembly (MEMA) then called Medical Symposium, was held in 1951. A department of Public Health, established within the School of Medicine in 1957, later became the independent Faculty of Health Sciences at AUB.

Starting in the early 1940s, visiting faculty came in numbers from major US universities, including Columbia, Harvard, and Johns Hopkins. Their support and contributions culminated in the establishment in 1945 of the first residency training programs in Lebanon. Graduates of these programs went to the US for further training and many returned with excellent credentials and skills, to teach at AUB and to serve in Lebanon. They in turn trained other young doctors who also returned to AUB. The result was a rapid influx of trained medical personnel, resulting in an exponential growth of the medical school and its hospital. The quality and availability of both medical training and care to the people of Lebanon and the region, was markedly improved during the first three quarters of the 20th Century.

In 1956 the AUB Hospital became the first hospital in the region to receive full accreditation by the US Joint Commission on Accreditation of Hospitals. (Accreditation was suspended in 1986 during the Lebanese civil war, but was recently achieved through Joint Commission International (JCI) again in 2007.) By the mid-50s the AUB Hospital became a referral center for patients from the entire region and beyond. Also at this time, the geographic and social mix of students and patients reached their greatest diversity.

A new Medical Center with a 425 bed hospital was inaugurated in 1970 and the Diana Tamari Sabbagh Building for the Faculty of Medicine was occupied in 1975.

Fellowship specialty training programs were established as of 1971 providing the opportunity for many physicians to acquire very advanced and sophisticated training in Lebanon.

Research laboratories were built and research output increased significantly. In 1966 a PhD program in Basic Medical Sciences was introduced which graduated 54 students from 1970 to 1990. An MD-MS program was also established during the same period to develop academic physicians for Lebanon and the region.
C. A Change of Course
The Lebanese civil war from 1975-1991 interrupted the momentum of growth in the Faculty of Medicine and Medical Center. But the talents and energies of AUB’s medical professionals turned to focus on providing a crucial service to the community. The Medical Center adapted quickly to the necessities of war time medicine and took care of most of the war’s victims in its area. In the meantime, the doctors and nurses of the AUB Faculty of Medicine continued to play a role in the region, working under very difficult circumstances to provide excellence in medical education and postgraduate training. A measure of their success was the large number of graduates from all programs who went on to excel in the US and elsewhere.

The grading and evaluation system was radically changed during this period, and now matches that of the best centers in the USA. In 1979, the admission requirements to the MD program were opened to qualified AUB students with majors from all undergraduate disciplines.

D. Back to Course
In 1991 major re-adaptation to “peace time” started. The Faculty of Medicine and the AUBMC began the process of major re-building and planning.

By 1997, the first Basic Medical Science Core Research facility was built in the Faculty. An academic review of all Faculties of the University by highly powered external review teams presented their reports in 1999. The core facility and its impact on recruitment and research output were highly commended in the review report. Research funding from 1996-2008 increased markedly and the quantity and quality of publications increased by around 6 fold, to around 3-4 publications per funded investigator per year. The quality of these publications likewise increased significantly.

The Academic and Professional Programs

The academic review of the Faculty of Medicine resulted in a re-confirmation of AUB’s mission for medical education, and a commitment to bring in AUB’s programs and facilities back to high standards of professionalism.

During this period, there were significant developments in the educational programs. The curriculum was re-designed to support small group interactive learning. New teaching methods were introduced, including Problem Based Learning (PBL) and Evidence Based Medicine (EBM).

The Middle States Commission on Higher Education accorded the American University of Beirut (AUB) accreditation for all its Faculties on June 25, 2004 after an extensive institutional self-study. The Board of the Commission on Collegiate Nursing Education (CCNE) in the United States granted the School of Nursing full accreditation for its BS and MS programs for a five-year term, effective October 13, 2007, making them the first nursing program to receive CCNE accreditation outside the United States. Effective October 2007 the AUB Medical Center received full accreditation by the Joint Commission International (JCI). Between 2002 and 2005 all the medical programs were
formally reviewed, approved, and registered by the New York State Department of Education.

In 2000, a joint MD/PhD program was established with the Medical University of South Carolina (MUSC). Partnerships were built with other Medical Schools and Hospitals within Lebanon and the U.S., notably with St. Jude Children’s Research Hospital, the Memorial Sloan-Kettering Cancer Center and the University of Texas MD Anderson Cancer Center. The Faculty of Medicine’s (FM) postgraduate residency training program became fully compliant with the American Council of Graduate Medical Education (ACGME) guidelines. Clear criteria for faculty appointment and promotion were developed and adopted with measurable indicators that resulted in a significant improvement in the quality of the faculty. Annual review and documentation of faculty efforts and performance were established.

The Faculty of Medicine reactivated community outreach programs with Ain-Wa-Zeyn in the Shouf area, and the Rafik Hariri University Hospital in Beirut. In April 2007 the Faculty became affiliated with the Nabatieh Governmental Hospital in south Lebanon through telemedicine. Through this program AUB professionals provide education and healthcare to people in a remote area in Lebanon. There are plans to expand this program to other areas in Lebanon and the region.

Patient Care / AUBMC

In 1998 a complete study of patient care at the AUBMC was concluded by the Joint Commission Worldwide (JCW). A new Medical Practice Plan (MPP) was established in 2002, which generated enough funds to allow for the recruitment of 79 faculty members from 2002-2008, and the retention of 158 faculty members, with no additional liability to the university. This paved the way for sustainable planned growth in the Faculty of Medicine and the Medical Center, and for the establishment of multidisciplinary programs, group practices, and skill enhancement. The patient workloads increased significantly in all services and patient mix improved, resulting in the reversal of the financial deficit of the Medical Center. With the help of the Medicine and Health Committee of the Board of Trustees, quality assurance and performance improvement became a top priority.

Other major support projects were introduced at this time, including the phased implementation of a total hospital information system (HIS), a picture archiving computer system (PACS) and the radiology information system (RIS). The core applications of the HIS include an admission, discharge and transfer module (ADT), the electronic medical record and master patient index module, an order entry and results reporting module used by several medical and servicing units, a pharmacy module, a nursing management and scheduling module, and a document management system for medical and administrative units. The applications are regularly updated to meet rising needs and new technologies; currently 75% of the modules are fully implemented.
A Master Plan for the renovation and up-grading of the Medical Center was developed in 2000-2001 by Machado and Silvetti and built around a strategic University programmatic plan compiled by MGT of America. The plan included a systematic renovation of the hospital floors. Currently, the sixth floor (Pediatrics) and the pediatric intensive care unit (PICU) have been renovated. The bone marrow transplant unit has been built on the eighth floor, while the rest of the eighth floor is being converted into an adult cancer inpatient facility. The fourth floor is currently being converted to house neurology and neurosurgery inpatients and will include a neuro-intensive care unit. A neonatal intensive care unit is currently being built on the seventh floor. The remaining hospital floors will be renovated according to the master plan time-line. A detailed plan for all intensive care and step down units is part of the Master Plan.

The Emergency Department facility was totally renovated in the ground floor of the Phase I building (which is contiguous with the hospital) and has been in operation since 2006. The rest of the Phase I building will be renovated to include specialized clinics, procedure areas, and the academic space for the clinical departments. The outpatient department clinics (OPD) will move to the ground floor of the hospital and the private clinics are already moving into the recently renovated AbuKhater Medical Arts facility (MAF). The remainder of the MAF will be renovated after the Business school moves into its new facility. The renovation of the old surgery building (building 56) is complete, and it now includes inpatient and outpatient units for the Children Cancer Center of Lebanon, primary care and Family Medicine facilities, the Basile adult outpatient cancer center, psychiatry inpatient and outpatient units, and the Medical Center Computing and Network Services.

The School of Nursing building is expected to be completed by end of summer 2008, and the Master Plan for the Diana Tamari Sabbagh building is being implemented in phases.

The Master Plan details future projects, including the expansion and upgrading of the operating rooms and the administrative offices of AUBMC (beginning soon), phased conversion of all floors to house patient centered multidisciplinary programs, expanding the MAF onto the adjacent ex-tennis court area, and ultimately the building of a new hospital in 20 years.

The Pierre Abou Khater Medical Arts facility

The newly renovated -Building 56- Old Surgery building: that houses

1. Children Cancer Center of Lebanon (CCCL) affiliated with St. Jude’s hospital (Memphis-USA)
2. Family Medicine Department
3. Naef K. Basile Cancer Institute
4. AbuHaidar Neuroscience Institute – Psychiatry wing
5. Medical Center Computing and Network Services
The future holds many challenges for the Faculty of Medicine and Medical Center. Let us, like our founders and predecessors, acknowledge these new challenges as opportunities and take a more active role in shaping the future.

**Mission of the Faculty of Medicine**
The mission of the Faculty of Medicine is to provide optimum, advanced, state-of-the-art, comprehensive, timely, and cost-effective medical education for each student. The faculty aims to reach this objective by implementing innovative teaching techniques, and by recruiting and retaining outstanding faculty and students. The faculty also strives for improved student performance and career opportunities, as well as improved basic and clinical research, more effective patient management, and new and innovative medical approaches. The faculty focuses on enhancing the regional and global reputation of the AUB Medical Center (AUBMC) by encouraging the development of additional centers of excellence, and developing more effective uses of physical resources and funds.

**Mission of the AUB Medical Center**
The mission of the AUBMC is to maintain a leadership role in consistently providing excellent, accessible, and comprehensive health services to the people in Lebanon and the region, while continuing and enhancing our tradition as a distinguished academic and research medical center.
II. Strategic Plan Overview

The current strategic plan for the Faculty of Medicine and the AUB Medical Center builds on the recent program development described above, and the 2000-2001 Master Plan for facility renovation. It is centered in the mission of medical education, research, and patient care at AUB.

Future strategies include:

1. Ensure entry of students from all undergraduate majors other than only from biology and chemistry, in a balanced mix and establishing more flexible tracks of education.

2. Implement the PhD, MD-PhD, and Professional MS Programs in strong association with PhD programs of other Faculties of the University – particularly life sciences and engineering.

3. Consolidate departments and develop the research enterprise to further the careers of the investigators, to form the basis of the PhD program and attract adequate research funding for sustainability.

4. Establish Incubator projects/Centers
   • Molecular Basis of Disease
   • Genetically Inherited Disease
   • Embryonic Stem Cell Research
   • Natural and Synthetic new drugs
   • Biomechanical and Biomedical Engineering

5. Form multidisciplinary clinical programs that can grow at their own pace and define their links with academic departments.

6. Refine group practices

7. Strengthen and expand the postgraduate (Residency and fellowship) training programs and extend the role of AUBMC to the region.

8. Develop partnerships with peer institutions in the US and the region, to share our experience and expertise. Establish clinical satellite facilities in Lebanon and the region.

9. Extend the role of AUBMC through Telemedicine in both Education and Patient Care to other areas in Lebanon and the Region.
The various stakeholders in the FM and the AUBMC have been identified and their needs addressed in this plan. These include: students, patients, faculty members, employees and other professionals, government and private guarantors, funding agencies and health care industries.

This overview mentions three areas of focus, **Education, Research, and Patient Care**, each with its identified goals and strategies, which are more fully discussed in the body of the Strategic Plan. In patient care, the goals and strategies are listed under the following components: People Excellence, Best Practices in Medicine, Enabling Facilities, State-of-the-Art Technology, Finance, Outreach, and Marketing.

**A. Education**

The Faculty of Medicine provides its students and its postgraduate trainees with excellent base of knowledge, competencies, and skills that integrate the disciplines of basic, clinical, and social sciences. It promotes high professional standards, altruism in the care of patients and enthusiasm for life-long learning. It continued to interact positively with the best schools of Medicine in the USA. Its graduates have been successful, particularly in the USA and Lebanon, or wherever they happened to be.

The Faculty of Medicine admits students and post graduate trainees with high academic standards and achievement. The strategic plan outlines ways to achieve discipline diversity of entering students. The curriculum emphasizes independent learning, interprofessional learning, constructivist approaches and flexibility to achieve a varied output in terms of potential careers, in both the degree and post graduate training programs.

The introduction of the residency programs at AUBMC in 1945 and the specialty fellowship programs as of 1971, resulted in a rapid development of a sophisticated and successful healthcare system in Lebanon. Likewise, the development of residency and fellowship programs has become one of the most pressing current needs in the region. AUBMC is currently positioning itself to be a major player in post graduate training in Lebanon and the region.

**Goal 1:** **Increase student diversity in terms of their educational, social and geographic backgrounds, and continue to maintain the high quality of entering students.**

**Strategies**

- Ensure the entry of students from all undergraduate majors other than only from biology and chemistry, to establish a more balanced mix of fields of interest among students and to establish more flexible tracks of education.
- Modify the admission process to ensure that both cognitive achievement and the personal qualities and attributes of students are considered in the final selection process
Goal 2: Emphasize independent learning, and an education that allows the expression of varied interests and potentials among students.

Strategies

- Create flexibility and balance between active student learning (problem based) and lecture-based learning, and introduce clinical teaching from the beginning, in order to nurture skills of critical and analytical thinking and instill the habit of life-long learning.
- Introduce innovation in curricular offerings such as new tracks, accelerated and bridging programs, clinical internships, electives, and on-line courses.
- Strengthen multidisciplinary teaching and explore alternative methods and venues for teaching basic and clinical skills (e.g. a virtual microscope, simulations) in order to achieve adequate dexterity and skill development.
- Place greater emphasis on developing the ethical, social and humanistic aspects of the practice of medicine. Introduce courses in ethics, history of medicine, and others.
- Re-examine and validate outcome analysis and assessment tools.
- Provide experience in research in the basic or clinical sciences prior to graduation, in order to develop the skills for academic inquiry, research, and outcome analysis.
- Align the curriculum with the changing realities of medical practice such as short hospital stays, the impact of private third party payers on patient mix, the transformation to patient-focused practice and expansion of ambulatory service.

Goal 3: Improve the quality of Post Graduate Medical (Residency) training in the different specialties and areas of practice.

Strategies

- Increase diversity of trainees in residency and fellowship programs
- Align AUBMC’s clinical activities with the portfolios needed by trainees in the various programs, and keep a record of the portfolios through log books
- Comply with American Council of Graduate Medical Education (ACGME) standards. Prepare for accreditation
- Create cross rotations and exchange programs with similar institutions in the region and the USA.
- Strengthen our post-graduate (resident and fellowship) training programs
- Provide career opportunities for our graduates and trainees
Goal 4: Expand the Education Unit to include a learning clinical skills center and provides testing & assessment services

**Strategies**
- Provide expertise in teaching, learning, positive behavior change and assessment.
- Hire and train the human resources to fulfill all needs of medical education
- Develop a continuing faculty professional development program in education to support the introduction of new concepts, tools, and technologies
- Emphasize the teaching and development of skills, in addition to knowledge, behaviors and attitudes relevant to medical practice.
- Support emerging Medical Schools and hospital based training programs in the region
- Formalize medical education as a scholarly discipline with research emphasis on the region
- Work to establish a national and international reputation in the area of medical education, to serve as a consultant body to local and regional medical schools in all fields
- Work with other Faculties of Medicine and the Order of Physicians in Lebanon to establish national guidelines for the education and credentialing of physicians.
- Extend the role of AUBMC through Telemedicine in both Education and Patient Care to other areas in Lebanon and the Region.

Goal 5: Re-start PhD program, and introduce the MD-PhD and the professional MS programs in basic medical sciences and nursing.

**Strategies**
- Implement the PhD, MD-PhD, and Professional MS Programs in strong association with PhD programs of other Faculties of the University – particularly life sciences and engineering.
- Continue to recruit credentialed faculty who can mentor prospective PhD students and can successfully compete for extramural funding to maintain an essential critical mass of investigators
- Encourage the development of investigators with an independent, focused, productive, internationally known, and sustainable research careers
- Institute a visiting scholar program to inter-mesh with the PhD program seminar series
The table below summarizes the projections of the number of students in all programs, and the number of faculty. The categories entitled Medical Practice Plan participants (MPP Participants) and non-participants spend approximately 70% of their time in clinical practice. The sum total of the contribution of faculty members in teaching is equivalent to 60 FTEs and will remain so in the coming 5 and 10 years for the MD and MS programs. The increase in the total number of faculty members reflects primarily the needs of the clinical service and to a small extent the PhD program.

<table>
<thead>
<tr>
<th>Total Student Enrolment</th>
<th>Actual 2007-08</th>
<th>Estimated Total Student Enrolment (FTE) 2008-09, 2009-10, 2010-11, 2011-12, 2012-13, 2017-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Prgms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MD Prgms</td>
<td>316</td>
<td>322 338 347 356 360 360</td>
</tr>
<tr>
<td>Graduate - Masters</td>
<td>42</td>
<td>52 57 62 66 70 70</td>
</tr>
<tr>
<td>PhD Prgms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residents</td>
<td>223</td>
<td>238 241 244 244 244 247</td>
</tr>
<tr>
<td>Fellows</td>
<td>37</td>
<td>37 37 37 37 37 37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Estimated Total Faculty Member (FTE) 2008-09, 2009-10, 2010-11, 2011-12, 2012-13, 2017-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Science</td>
<td>20 21 20 20 20 20 20</td>
</tr>
<tr>
<td>MPP-Participants</td>
<td>158 170 182 194 206 218 278</td>
</tr>
<tr>
<td>Non MPP-Participants</td>
<td>71 70 69 67 66 65 55</td>
</tr>
<tr>
<td>Total Faculty Members</td>
<td>249 261 271 281 292 305 353</td>
</tr>
<tr>
<td>Teaching FTEs</td>
<td>60 60 60 60 60 60 60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cumulative Change in Student Enrolment Levels (FTE) 2008-09, 2009-10, 2010-11, 2011-12, 2012-13, 2017-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Prgms</td>
</tr>
<tr>
<td>MD Prgms</td>
</tr>
<tr>
<td>Graduate - Masters</td>
</tr>
<tr>
<td>Graduate Prgms - PhD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cumulative Change in Faculty Members (FTE) 2008-09, 2009-10, 2010-11, 2011-12, 2012-13, 2017-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Faculty Members(all functions)</td>
</tr>
<tr>
<td>Teaching FTEs</td>
</tr>
</tbody>
</table>

* Ph.D. programs will partially replace M5 programs.

**B. Research**

The culture of research at the Faculty of Medicine and the Medical Center dates back to more than a century ago. Significant contributions to science have been made throughout its history making major medical centers in the US seek and recruit Medicine graduates and faculty members.

The current strengths of the Faculty of Medicine in the area of research include the quality of the faculty and trainees, the well-equipped core research facilities, the existence of regulatory infrastructure and administration, and the availability of intramural start-up funds.
Research productivity and funding has increased significantly with the establishment of the core facility (1997) and the introduction of the Medical Practice Plan. A critical mass of 15 credentialed faculty members have been so far recruited with the intent to re-establish the PhD and MD-PhD programs at the Faculty of Medicine. Plans to establish professional MS programs are in progress.

**Goal 6: Promote pure and applied research that is valued globally and provide opportunities to ensure successful research careers for the faculty members**

**Strategies**

- Develop Incubator Projects in the following 5 areas:
  - Molecular basis of diseases and translational research
  - Genetically inherited diseases
  - Regenerative medicine and embryonic stem cell research
  - Natural and synthetic novel drugs
  - Bioinformatics, Biomechanical and biomedical engineering
- Promote multidisciplinary research programs that build on current areas of interest, expertise, and local uniqueness
- Promote translational research programs with investigators from the region and beyond.
- Encourage research with high potential for competitive scientific productivity, that attracts extramural funding and leads to patent acquisition
- Upgrade the Core Facilities to match research needs
  - Molecular Biology
  - Protein Chemistry
  - Analytical Chemistry
  - Computational Biology and Bioinformatics
  - Confocal Microscopy and Video Imaging
  - Tissue Culture
  - Animal Care Facility
  - Clinical Research Unit (CRU)
  - Create a Clinical Research Organization (CRO)
- Provide the appropriate environment and resources for faculty members and students to conduct high quality research
- Develop partnerships with peer institutions in the region, to share our experience and expertise. Establish satellite facilities in Lebanon and the region
- Consolidate the Basic Science departments for better efficiency of the research enterprise
Consolidation of the Basic Science Departments is envisioned through the formation of the Department of Basic Medical Sciences with an education core (currently 25 FTEs) and a research core (currently 20 FTEs). The total FTEs in each of the cores comes from the summation of the education effort and research effort of all faculty members. The current departments become divisions within the BMS department. The current number of FTEs is indicated for each division. The Basic Science Teaching, Academic and Administrative Core consists of 12 FTEs from the Basic Science Departments and 13 FTEs from the Clinical Departments, while the Basic Science Research Core consists of 8 FTEs from the Basic Science Departments and 12 FTEs from the Clinical Departments.

* Currently under the program of Molecular and Cellular Medicine.
C. Patient Care

Throughout its history, AUBMC maintained itself as the provider of highest quality care in Lebanon and the region. It adapted well to the changing times. The rapid adaptation to war time (1975-1991), in terms of patient and physician mix, was followed by an equally rapid re-adaptation to peace time. During the last decade AUBMC re-established itself through recruitment, renovation, and re-equipment, to care for a wide range of diseases and health conditions in Lebanon. It is steadily working to establish a patient friendly and caring environment. Solo practice is being rapidly replaced by patient focused multidisciplinary group practices governed by the Medical Practice Plan. The change is making health care professionals assume greater ownership of the process and is empowering the business units. AUBMC now enjoys a reputation for providing sophisticated diagnostic and therapeutic capabilities, making it a magnet for patients.

The Strategic Plan focuses on growth of patient services, locally and regionally.

<table>
<thead>
<tr>
<th>Major Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Form multidisciplinary clinical programs with group practices that can develop at their own pace and define their links with academic departments</td>
</tr>
<tr>
<td>• Establish satellite clinical sites in Lebanon and study the potential for the region</td>
</tr>
<tr>
<td>• Develop partnerships with peer institutions in the region, to share AUB’s experience and expertise particularly in post graduate programs and in the development of practice plans.</td>
</tr>
<tr>
<td>• Develop partnerships with peer institutions in the USA to strengthen AUB’s research capabilities, education scope and patient care.</td>
</tr>
</tbody>
</table>

Components of care:
- People Excellence
- Best Practices in Medicine
- Enabling Facilities
- State-of-the-Art Technologies
- Finance
- Outreach

People Excellence

**Goal 7: Provide the environment, workload, infrastructure and facilities required to recruit and retain faculty members, nurses, and staff committed to excellence**

**Strategies**
- Continue the growth of the Medical Practice Plan (MPP) driven by physicians’ practice in order to generate funding to support recruitment of new faculty, research, and provide support for other programs.
• Continue to refine the workload and skill-driven physician recruitment plan to hire and retain faculty
• Maintain and grow the budget for new recruits initiation research funding
• Develop a relative value unit (RVU) effort analysis scale to effect equitable compensation for teaching, research, and administration, and establish scalable compensation strategies
• Develop a well prepared and motivated clinical and administrative workforce through ongoing professional development, a career advancement program, a career ladder and succession plans
• Optimize wages and benefits through periodic reviews
• Establish a yearly recruitment and staffing plans so that replacement of mission-critical positions and hard-to-fill positions are well planned to maintain continuity of services and aligned with the growth and the establishment of new services and programs.
• Address best practices and encourage professionalism and positive habits.

Total faculty compensation (upper line in red) and total academic salaries (lower line in blue) from 1995 to 2008. The number of faculty recruited is written above the year of recruitment on the x-axis. The data from 1995-2008 is actual. The increase in the number of faculty is significantly greater than the commensurate increase in compensation since academic physicians ultimately pay for themselves through the MPP. MPP started in 2001-2002.
The number of non-academic (including nurses) FTEs as per the 5 and 10 year plan were determined and the projected salaries, benefits, and patient care revenues per FTE computed (shown in US Dollars on the y-axis). The rate of growth of patient revenue per FTE is much faster than either the salary per FTE or benefits per FTE. It is expected to increase from the current $45,000/FTE to $70,000/FTE in 10 years.

**Best Practices in Medicine**

**Goal 8: Sustain and seek accreditation by local governmental and international accreditation agencies.**

Sustain accreditation by the:
- Joint Commission International (JCI)
- Lebanese Ministry of Health (MOH)
- American Nurses Credentialing Center (ANCC)
- Commission on Collegiate Nursing Education (CCNE)
- Commission on Laboratory Accreditation of the College of American Pathologists (CAP)
- American Dietetic Association (ADA)
- Atomic Energy Commission

Seek accreditation by the:
- American Council for Graduate Medical Education (ACGME) or equivalent, for the Post Graduate Medical Education/Training program.
- ANCC Magnet Recognition Program Designation for Nursing Services
**Strategies**

- Create a culture of quality by monitoring key indicators and performance improvement initiatives
- Define Clinical Initiatives that would directly improve Medical Care
- Update on bi-annual basis the Policies and Procedures of the Medical Center.
- Establish Key Performance Indicators (KPIs) that span all the measurable elements of the accreditation processes
- Continue to monitor the Performance Improvement indicators with the Board of Trustees Performance Improvement Committee (PIC)

---

**Goal 9: Establish the desired patient case mix and define the appropriate balance of primary, secondary, tertiary and quaternary medical care at AUBMC**

**Strategies**

- Restructure the physical facility to accommodate the evolving needs, as per the Master Plan and accrediting bodies
- Define the desired patient throughputs and control it at portals of entry (admission office, emergency unit, etc.) and through agreements with other hospitals (mainly governmental) in Lebanon and guarantors.
- Establish, in partnership with others, clinical satellites facilities in Lebanon and the region.

---

**Goal 10: Provide patient-centered, outcome-oriented, and friendly medical care supported by best-in-class hospital services**

**Strategies**

- Emphasize patient centered, timely, effective and efficient care.
- Create a one-stop service throughout ambulatory service access points.
- Enhance privacy, confidentiality and continuously strive to improve outcomes.
- Create a best-in-class services (dietary, housekeeping, laundry, etc.) for patients.
- Develop adequate controls for the procurement cycle.
- Pursue the development of multidisciplinary patient centered group practices.
  Define relationship of group practices to departments.
Neuroscience Institute

- Department of Internal Medicine
  - e.g. Division of Adult Neurology
  - e.g. Division of Neurosurgery
  - e.g. Division of Pediatrics
  - e.g. Division of Pediatric Neuro
  - e.g. Division of Psychiatry

Issues:
- Recruitment
- Clinical Facilities
- Financial Management
- Credentials

Services:
- Demyelinating and neuroimmune disorders
- Degenerative neurological disorders
- Epilepsy
- Headache and pain
- Intensive care neurology and neurosurgery
- Movement disorders
- Neurogenetics
- Stroke and neurovascular disorders
- Spine disorders

Clinical patient focused Multidisciplinary Programs, centers, or institutes

Divisions may:
1- Remain within different departments (current)
2- Grow to individual departments (minimum 12 members)
3- Consolidate into one department

Basile Cancer Institute

- Division of Medical Oncology 5 (100%)
- Department of Radiation Oncology 2 (100%)
- Division of General Surgery 9 (20%)
- Division of Neurosurgery 4 (30%)
- Division of Urology 3 (20%)
- Department of Head Neck Surgery 5 (15%)
- Department of Gynecology 2 (25%)
- Department of Radiology 6 (25%)
- Department of Pathology 6 (20%)

Issues:
- Recruitment
- Clinical Facilities
- Financial Management
- Credentials

Services:
- Benign & Oncology
- Hematology
- Lymphoma
- Leukemia
- Bone Marrow transplant
- Breast Cancer
- Brain (Neurology)
- Thoracic
- Gastrointestinal
- Genitourinary
- Gynecologic tumor
- Head and Neck
- Radiation Oncology
- Supportive care

Clinical patient focused Multidisciplinary Programs, centers, or institutes

E.g. Naef K. Basile Cancer Institute

Divisions may:
1- Remain within different departments (current)
2- Grow to individual departments (minimum 12 members)
3- Consolidate into one department

# of Individuals 42
14.55 FTEs
Current Structure for the Emergency Department and Service

- e.g. Department of Internal Medicine
- e.g. Department of Surgery
- e.g. Division of Orthopedics
- e.g. Department of Pediatrics

Department XXXX

8 FTEs
Clinical Emergency Serves
Emergency Department 3+1

12 FTEs to serve 40,000 Visits per Year
Enabling Facilities

Goal 11 : Provide medical facilities that are well maintained, and which provide an optimal environment of health care and services for patients, students, faculty and staff.

Strategies

- Follow the Master Plan, developed around a 5, 10, and 20 year programmatic plan compiled by MGT of America with AUB/Medicine in year 2000.
- Implement the rotational renovation and maintenance plan as recommended by the Master Plan with standardized layout and furniture plans to be used while renovating any facility
- Draw an implementation time line for the Master Plan with clearly defined transitional flex space and requirements.
- Provide adequate facility for the anticipated workloads and programs

The Master Plan projected the needs of FM/AUBMC to meet its mission and the stakeholders’ requirements while remaining financially viable, and aligned the proposed programmatic and service growth needs with the appropriate space (e.g. clinics for physicians) and other facilities.

The graph blow built by MGT of America indicates the actual and projected outpatient visits to the private clinics, from year 1996 to 2020. The outpatient workload serves as a locomotive for hospital admissions and all AUBMC services.
State-of-the-Art Technologies

Goal 12: Introduce new technology in a timely manner to improve the quality of medical care and to upgrade hospital administrative services.

Strategies
- Continue to acquire and/or develop Hospital Information Systems (HIS) modules. Expand and upgrade the infrastructure by taking advantage of new technologies.
- Continue to update the essential major equipment (e.g. Picture Archiving Computer System PACS, PET/CT, MRI, Linear Accelerators).
- Implement Energy Conservation plan.
- Extend Telemedicine interactivity with other centers in Lebanon and abroad.
- Apply regularly equipment management and maintenance programs/ software to meet local and international standards.
- Ensure transfer of the latest technology to Lebanon and the region.

Finance

Goal 13: Achieve financial sustainability through growth, best practices, and other operational improvements.

Strategies
- Eliminate the deficit by fiscal year 2012-2013.
- Restructure the Medicine Finance Team – Define devolution.
• Establish an integrated supply chain operation and lines of authorities in financial operations
• Develop pricing charge master through the cost accounting module and collection strategies
• Continue to purchase the Payroll and Payable application share for Medicine from the University at a defined and competitive unit price
• Re-negotiate all contracts and adjust volume discounts with private 3rd party payers
• Continue to improve management of receivables to keep them at a minimum and review the provision for doubtful accounts on a quarterly basis
• Continue the expansion of AUBMC outpatient and inpatient services through the targeted increase in physicians
• Increase the utilization of outpatient procedures (mainly Lab and Xray) by the third party private insurers
• Utilize the renewal and replacement funds in upgrading the facilities (as per the master plan) to compete with the increasingly competitive market in Lebanon

AUBMC’s net revenue, expenses, and shortfalls/surplus are plotted yearly from 1997 to 2019. The breakeven point is expected to be in 2012-2013. Five and Ten years plans were drawn from which the planned revenues and expenses were derived for 2007-2008 to 2018-2019.

Outreach

Goal 14: Continue to be a leading provider of services in Lebanon and the region in the following areas:
– community outreach
– transferring and marketing new technologies
– providing excellent clinical care
– offering excellent academic programs that serve students and patients, and that share knowledge with other institutions.
**Strategies**

- Extend ‘service to the community’ through the Outpatient Department (OPD) and governmental hospitals
- Financially subsidize (by default of government payments) Government patients and NSSF
- Establish satellite facilities in different regions of Lebanon
- Collaborate with School of Nursing and Faculty of Health Sciences in outreach programs for the community
- Extend the Telemedicine program

**Marketing**

**Goal 15: Create awareness in the region of AUBMC’s mission with emphasis on centers-of-excellence and outcomes**

**Strategies**

- Promote AUBMC services and image to customers to help distinguish ourselves from competitors
- Create customized, clinically reviewed booklets that effectively present health information while raising community awareness of our services
- Assess and expand our products (physical set-up, services, quality of care)
- Maintain high patient satisfaction scores
- Continue to communicate our ‘products’ and ‘managed care strategy’, mix of procedures, and explore possible communication venues (web, conferences, trade shows, media)
- Facilitate and increase users access to AUBMC Web site
- Increase customer awareness of our accessible services
The diagram above represents a summary of the faculty contribution to teaching, research, administrative (academic and clinical), and clinical services, with the resultant financial implications. (Data included is for 2006-2007).

In panels A and D, the categories entitled MPP Participants and non-MPP participants spend about 73% of their effort in clinical practice. Panel A is data of 2006-2007 and panel D as projected for 2011-2012. Green represents teaching and academic administration, yellow for research, and blue for physicians practice (outpatients ambulatory service) and clinical administration. The pink represents hospital and inpatient activities. Panel B represents the average percent effort of members of the basic and clinical departments, and the weighted average of both. The 215 teaching FTEs in panel A provide, at 28% academic effort, the 60 FTEs required for all academic functions. This number is expected to remain constant in the coming 5 years. The increase in FTEs in panel F reflects primarily the needs of the clinical services. Panel F shows that with a constant (60) FTEs required for the academic programs, there will be an increase of 37 FTEs (157 to 194) as MPP participants. With a constant academic effort there will be 14 spare FTEs (shown in F-green) that may be involved in research or clinical practice. Panel H-pink shows that MPP practice generated in 2006-2007 a net revenue of $60m for the hospital, and the physicians made $16m from that practice. The hospital pays $2.4m towards the physicians salaries in lieu of clinical administration, The Faculty of Medicine (H-green) ends up paying $4.6m of the $7m as compensation for the faculty members. In H-blue (ambulatory care), the physicians bring in $22m and take out $11.4m. In the three H panels, current and target figures for various statistical parameters are shown.
Proposed Linkages of Medicine with all University Units and Discipline Consolidation

- Social Sciences
- Humanities

Interfaculty Programs

Natural Sciences (life sciences and physical sciences)

<table>
<thead>
<tr>
<th>Saab Medical Library</th>
<th>Jafet Library</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Engineering and Architecture</td>
</tr>
</tbody>
</table>

| Medical Center / FM (DTS) / CCC Scientific Research building / Engineering | Natural Sciences / Agriculture |

<p>| FM Core Research Facilities | Central Research Laboratories | Lower Campus Core |</p>
<table>
<thead>
<tr>
<th>Strategic Areas</th>
<th>Operating Revenue (in $ 000’s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y1</td>
</tr>
<tr>
<td>a. EDUCATION</td>
<td>$0</td>
</tr>
<tr>
<td>b. RESEARCH</td>
<td>$100</td>
</tr>
<tr>
<td>c. BEST PRACTICES IN MEDICINE</td>
<td>$260</td>
</tr>
<tr>
<td>d. PEOPLES EXCELLENCE</td>
<td>$50</td>
</tr>
<tr>
<td>e. ENABLING FACILITIES</td>
<td>$0</td>
</tr>
<tr>
<td>f. STATE-OF-THE-ART TECHNOLOGIES</td>
<td>$450</td>
</tr>
<tr>
<td>g. BEST CLINICAL SERVICES</td>
<td>$0</td>
</tr>
<tr>
<td>h. OUTREACH</td>
<td>$30</td>
</tr>
<tr>
<td><strong>GRAND TOTAL OF STRATEGIC GOALS</strong></td>
<td>$890</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategic Areas</th>
<th>Operating Costs (in $ 000’s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FTE</td>
</tr>
<tr>
<td>a. EDUCATION</td>
<td>3.00</td>
</tr>
<tr>
<td>b. RESEARCH</td>
<td>40.00</td>
</tr>
<tr>
<td>c. BEST PRACTICES IN MEDICINE</td>
<td>136.00</td>
</tr>
<tr>
<td>d. PEOPLES EXCELLENCE</td>
<td>33.00</td>
</tr>
<tr>
<td>e. ENABLING FACILITIES</td>
<td>3.00</td>
</tr>
<tr>
<td>f. STATE-OF-THE-ART TECHNOLOGIES</td>
<td>0.00</td>
</tr>
<tr>
<td>g. BEST CLINICAL SERVICES</td>
<td>4.00</td>
</tr>
<tr>
<td>h. OUTREACH</td>
<td>2.00</td>
</tr>
<tr>
<td><strong>GRAND TOTAL OF STRATEGIC GOALS</strong></td>
<td>221.00</td>
</tr>
<tr>
<td>Strategic Areas</td>
<td>Y1</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>a. EDUCATION</td>
<td>$150</td>
</tr>
<tr>
<td>b. RESEARCH</td>
<td>$100</td>
</tr>
<tr>
<td>c. BEST PRACTICES IN MEDICINE</td>
<td>$1,470</td>
</tr>
<tr>
<td>d. PEOPLES EXCELLENCE</td>
<td>$150</td>
</tr>
<tr>
<td>e. ENABLING FACILITIES</td>
<td>$460</td>
</tr>
<tr>
<td>f. STATE-OF-THE-ART TECHNOLOGIES</td>
<td>$3,210</td>
</tr>
<tr>
<td>g. BEST CLINICAL SERVICES</td>
<td>$25</td>
</tr>
<tr>
<td>h. OUTREACH</td>
<td>$0</td>
</tr>
<tr>
<td><strong>GRAND TOTAL OF STRATEGIC GOALS</strong></td>
<td><strong>$5,565</strong></td>
</tr>
</tbody>
</table>