



Committee for the Evaluation of Medical Study Programs

Hebrew University - Hadassah

Faculty of Medicine, School of Medicine

Evaluation Report

July 1, 2014

Chapter 1- Background

The Council for Higher Education (CHE) decided to evaluate the study programs in the field of Medicine during the academic year of 2014.

Following the decision of the CHE, the Minister of Education, who serves ex officio as Chairperson of the CHE, appointed a Committee consisting of:

- Prof. Stephen Schoenbaum – The Josiah Macy Jr. Foundation, New York, USA: Committee Chair
- Prof. Raymond H Curry – Northwestern University Feinberg School of Medicine, Illinois, USA
- Prof. Shimon Glick- Professor emeritus in medicine, Faculty of Health Sciences, Ben Gurion University of the Negev, Israel
- Prof. Peter Crome- School of Medicine, Keele University, United Kingdom
- Prof. Elliot Gershon Department of Psychiatry and Behavioral Neuroscience, University of Chicago, Illinois USA
- Prof. David Katz – Professor Emeritus of Immunopathology, Faculty of Medical Sciences, University College of London, United Kingdom
- Prof. Ora Paltiel, Attending Physician, Department of Hematology- Hebrew University Hadassah Medical School, Hebrew University¹
- Prof. Jo Shapiro – Harvard Medical School, Harvard University, Massachusetts, USA

Ms. Daniella Sandler- Coordinator of the Committee on behalf of the CHE.

Within the framework of its activity, the Committee was requested to:²

1. Examine the self-evaluation reports, submitted by the institutions that provide study programs in Medicine, and to conduct on-site visits at those institutions.
2. Submit to the CHE an individual report on each of the evaluated academic units and study programs, including the Committee's findings and recommendations.
3. Submit to the CHE a general report regarding the examined field of study within the Israeli system of higher education including recommendations for standards in the evaluated field of study.

The entire process was conducted in accordance with the CHE's Guidelines for Self-Evaluation (of October 2012).

¹ In accordance with the CHE's policy, Prof. Paltiel- Clarfield did not participate in the evaluations of HUJI to prevent the appearance of a conflict of interests.

² The Committee's letter of appointment is attached as **Appendix 1**.

Chapter 2-Committee Procedures

The Committee held its first meetings on 23 February, 2014, during which it discussed fundamental issues concerning higher education in Israel, the quality assessment activity, as well as all medical Study programs in Israel.

During March 2014, the committee conducted multi-day visits at Ben Gurion University of the Negev and the Technion. In May and June 2014, committee members visited, Hebrew University, Tel Aviv University and the Bar Ilan University campus in Tzefat. During the visits, the Committee met with various stakeholders at the institutions, including management, faculty, staff, and students.

This report deals with the Hebrew University –Hadassah Medical School (HUJI). The Committee's visit to the school took place between the dates 25-27.5.2014. The schedule of the visit is attached as **Appendix 2**.

The Committee thanks the management of the Hebrew University and the Medical School for their self-evaluation report and for their hospitality towards the committee during its visit at the institution.

The format of this report is the following: Chapter 3A summarizes the Committee's observations and findings, but not its recommendations. Chapter 3B contains a full narrative of the Committee's observations, findings, and recommendations. Chapter 4 is a collection or aggregation of the Committee's recommendations. Chapters 3A, 3B, and 4 are organized in the following sections: Mission and goals; Organizational structure; Study programs; Human resources/faculty; Students; Teaching and learning outcomes; Research; Infrastructure; Self-evaluation process; and Additional comments. Readers may choose to read the entire report; or Chapters 3A and 4; or Chapter 3B.

Chapter 3: Evaluation of the Medical Study Program at Hebrew University-Hadassah

This Report relates to the situation current at the time of the visit to the institution, and does not take account of any subsequent changes. The Report records the conclusions reached by the Evaluation Committee based on the documentation provided by the institution, information gained through interviews, discussion and observation as well as other information available to the Committee.

Chapter 3A: Summary of Observations and Findings:

The Committee was aware that its visit came at an extraordinary time. A close relationship between Hebrew University and Hadassah Hospital has extended over several decades. Approximately three months before the visit, Hadassah Hospital declared bankruptcy and in the week before the visit, and following extensive debate, a new contract was voted upon favorably by the clinicians at Hadassah Hospital. In light of these events, the Committee was particularly impressed with the degree of commitment and dedication expressed consistently during our visit by the leadership, faculty, students and administrative staff.

1. Mission:

The stated mission of Hebrew University-Hadassah medical school (HUJI) is to “train physicians who upon graduation have acquired the knowledge, skills, and professional behavior that will enable them to provide humanistic care, practice excellent clinical medicine and demonstrate competence in research.”

Though the mission is admirable and many of the faculty and student leaders have excellent ideas about how to improve medical education of the school, the Committee felt that the structure of the institution does not facilitate changes and innovations in medical education that stem from a clear vision of the ideal physician graduate. Nor, did the Committee feel that the mission has been adequately communicated to the faculty and students in order to reinforce the important pedagogic principle that one should set expectations for learners in advance of teaching them.

2. Organizational Structure:

The HUJI Faculty of Medicine encompasses the schools of Medicine, Pharmacy, Public Health and Community Medicine, Nursing, and Occupational Therapy. The School of Dental Medicine has a separate faculty but there is overlap in the preclinical curriculum between the medical and dental schools and in the preclinical teaching responsibilities of the Faculty of Medicine.

The deanship, a four-year non-renewable term, rotates by tradition between preclinical and clinical sections of the Faculty. The dean recommends appointment of vice-deans, appoints chairs of the Faculty's committees, and is head of the school of medicine.

The medical students are examined for, and awarded a BSc degree at the end of their third year, subject to completion of a graduate seminar paper. The final exit MD degree is given at the end of seven years, subject to completion of a thesis and the internship (stage) year.

The budget is split into a portion relating to the first three years of medical school that goes to the preclinical faculty of Hebrew University and a portion relating to the second three clinical years that goes primarily to Hadassah. The formal committee structure of the Faculty parallels this separation between the preclinical and clinical components. One instance is at the level of appointments and promotions, where there are separate committees and in many respects separate expectations of the faculty. Also, in the past planning and management of the study program there have been separate Pre-Clinical and Clinical Committees, a separation that was described as having "deterred fruitful interactions..." and "precluded productive integration...." Therefore a single Teaching Committee was formed in October 2013 and is beginning to consolidate responsibility for the overall curriculum.

There is also now an *ad hoc* Advisory Committee on Review of the Curriculum, with a mandate to undertake a strategic review of the curriculum and suggest "advanced models of integrated medical studies..." This development was mentioned and welcomed many times by senior preclinical and clinical staff. We were impressed by the informed and intelligent leaders of these committees and hope that they will effect positive changes. The increase from 642 medical students in 2008-2009 to 906 medical students in 2012-2013, due to the new Tzameret military medicine program, represented an opportunity to re-evaluate educational practices. However, during this period of time the only important innovation was the Medical Humanities course, and it was in response to the 2007 CHE review.

Students, represented on curriculum review committees by invitation, contribute to discussions but are unable to vote. There seems to be a recurring cycle of representations and submissions by students to committees without much evidence of substantive action.

The present CHE Committee is concerned about unresponsiveness of the previous HUJI administrations to a number of past external recommendations relating to curriculum. It hopes that the current administration and single Teaching Committee will yield significantly greater action.

Dean Lichtstein stated that he has a considerable degree of discretion available to him for new initiatives. He hopes that his plans for change in the study program will

be supported not only by the faculty who advocate such change already but also by those who have been more resistant to change.

The medical school uses Shaare Zedek and Kaplan Hospitals in addition to Hadassah Hospital but has more students per available teaching bed than any of the other medical schools in Israel. Educating its large student body would be better accomplished with additional hospital beds and more ambulatory teaching sites.

3. Study Programs:

There are two 6-year MD programs: the traditional 6-year program and the 6 year Military Medicine (Tzameret) program. Some students may take a break from their MD studies to complete MD/MSc, MD/MPH or MD/PhD programs.

6-Year Program

Years 1-3 (preclinical) are based at the Ein Kerem Campus of Hebrew University with two days a week at the Givat Ram Campus in the first year, requiring travel for the entire student body. The faculty of medicine has minimal authority over the content or delivery of the courses at Givat Ram.

Several courses in the preclinical curriculum bridge the preclinical and clinical world and introduce students to the life of the doctor, including medical law, family medicine, evidence-based medicine, and an introduction to public health. Most preclinical courses are taught using traditional frontal lectures with little active learning or student engagement. Many pedagogic innovations that now dominate medical education programs internationally are still not employed in HUJI; but there are some outstanding exceptions such as the microbiology teaching program, and also histology, anatomy, evidence-based medicine, and public health.

The Man and Medicine course, co-taught by members of the School of Medicine and Faculty of Humanities in Years 1-3, emphasizes communication skills and the ethical and socio-cultural aspects of health and illness. Students also visit patients at home and write a reflective journal on their experiences. A desire to expand this program into the clinical years has not been realized.

Years 4-6 (clinical) are based mainly at the Hadassah Hospitals at Ein Kerem and Mount Scopus and also at Shaare Zedek, Kaplan, Herzog, and Eitanim Kfar Shaul Hospitals, and the Talbiyeh Clinic. Year 4 begins with a 12 week introduction to clinical medicine course taught primarily by frontal lectures. It also includes core clerkships in internal medicine, pediatrics, and surgery, and a two week "Ambulatory Care in the Community" course/clerkship. National examinations are taken at the end of the fifth and sixth year.

Teaching methods in the clerkships include frontal lectures, bed-side teaching, and case discussions, and also include students' being in the emergency room and outpatient clinics. Students present patients at ward rounds as well as perform

some minor technical procedures such as blood drawing. Although there has been some increase since the 2007 CHE report, the proportion of teaching in ambulatory settings during the clerkships remains very low. There is the two-week “Ambulatory Care in the Community” course/clerkship in Year 4 and an obligatory two week experience in family medicine in the 6th year. One-quarter of students in the 5th year also have a two week family practice experience.

Tzameret students, in addition to the regular 6-year program, take specific courses in military medicine and in military training during the summer breaks. Family practice clerkships are taken in military clinics where the teachers are not necessarily family medicine specialists. The first Tzameret student cohort graduates in 2016.

Currently, a review of the medical school curriculum is covering integration of clinical topics into the pre-clinical years and vice-versa; developing the pre-clinical curriculum into a systems approach and using clinical cases to illustrate topics; changing from teaching based on frontal lectures to an approach involving more team work and problem-solving; extending the medical professionalism program with the aim of teaching students defined competencies; extending the “Man and Medicine” course throughout the whole study program; increasing recruitment to the MD/PhD program; restructuring the Medical Education Center which currently does not have a director; and increasing the number of international exchange opportunities. We support and encourage these features of curricular reform.

Elective clerkships undertaken by HUJI students in other countries are not recognized with academic credit in spite of repeated student requests.

4. Human Resources/Faculty:

The senior preclinical staff employed by Hebrew University consists of 72 teachers, significantly below the 1998 total of 107. The major increase in the number of students due to creation of the Tzameret program, unmatched by a concomitant increase in employed teaching staff, is problematic. Although there are some 900 clinical teachers in total, and some participate in preclinical teaching, two-thirds of this total have no faculty appointments and teach on a purely voluntary basis.

The senior basic scientists who met the Committee had impressive research records and a clear commitment to professional excellence; but with some notable exceptions their commitment to teaching seemed of lesser priority. Several expressed skepticism about the need for and effectiveness of proposed changes in the curriculum and teaching methods.

The senior clinical teachers that we met were uniformly outstanding and, in spite of the recent serious hospital crisis, seemed optimistic and enthusiastic. They were committed to teaching and were positive about the present efforts to reorganize and modernize the curriculum and teaching methods.

Clinical assistants and junior faculty were positive about their work, the academic environment and their responsibilities. Their support upon returning from postdoctoral training seemed quite satisfactory. Some complained about a heavy teaching load in the second year after joining the Faculty and most reported having to teach subjects outside their area of expertise. Most were successful in obtaining research grants, were upbeat about their roles, and optimistic about their future academic status.

We heard little or nothing about efforts to recruit faculty in the behavioral sciences, social sciences and epidemiology.

For several years there has been no dedicated faculty staffing for the Center for Medical Education, whose staff consists of just an administrator and a secretary.

Criteria for recruitment stated in the self-evaluation report are “excellence in research, the candidate’s field of research, and the fit of this research area with the teaching needs of the Faculty”. No mention is made of quality of teaching. Since these faculty members are expected to teach, they either need to be capable teachers at the outset or their ability to teach should be explicitly developed and evaluated. Quality of teaching is given minimal consideration in promotions of faculty which should not be the case. The existing promotional track for those whose academic achievements are in teaching and educational leadership is perceived by many to be second class.

The self-evaluation report describes workshops related to faculty development, teaching performance, and medical education; and remedial help for teachers needing improvement is also mentioned. In view of the current staffing of the Center for Medical Education it is likely that the program of workshops and remediation cannot function at an optimal level.

The great majority of clinical teachers, particularly physicians in the community, teach voluntarily and without academic appointments. This will hamper efforts to extend ambulatory teaching.

5. Students:

Currently, about 110 students enter the 6-year program annually and about 65 enter the Tzameret program. Admission criteria are based on the matriculation scores and the standard psychometric scores. The top 400 students undertake multiple mini-interviews. HUJI’s multiple-mini interview process uses trained faculty instead of the actors used at the Israel Center for Medical Simulation (MSR).

The Tzameret admission process is similar to the regular 6-year program but applicants are screened first by the Israel Defense Force. Tzameret applicants are

younger since they defer their military service until after medical school is completed.

Each year 5-6 students from disadvantaged backgrounds are admitted to HUJI.

There does not seem to be any formal career advising for students. The number of dropouts is small ranging from 1 to 6 per year over the last 5 years.

There are a limited number of opportunities to undertake paid employment as a physician assistant. Some students are paid as teaching assistants for junior classes.

Students can have placements in research laboratories during the summer breaks. The aim is to provide experience that might encourage students to apply for the MD/PhD program and to prepare them for the MD thesis in the clinical years.

Counselling services are provided for students, usually at the student's expense. Services are available at various Hebrew University sites but not at Ein Kerem.

Students with learning disabilities are assessed and may receive various forms of support such as extra time to complete examinations.

Student complaints may be brought to the attention of year tutors. The Teachers-Students committee meets every 8 weeks. Complaints may also be brought to the attention of the Vice-Dean for Teaching and the Chair of the Teaching Committee.

The large size of teaching groups in the clinical clerkships prevents detailed individualized feedback on performance.

Students are not voting members of the Teaching Committee or curriculum subcommittees.

Students generally have positive feelings about the school, value the administration and faculty's commitment to their education and well-being, and feel able safely to voice their concerns. Student concerns center around: over-emphasis on basic science at the expense of other sciences; insufficient connection of the basic science teaching to clinical medicine; shortening of the clinical clerkships and the dearth of hands-on patient experience in some clerkships; the excessive number of students in each clerkship; the structure of some clerkships that lack focus on what is most important for students to learn; and a perceived lack of emphasis and opportunities to be involved in social justice activities.

The Alumni Association includes all graduates of the Faculty of Medicine, not just medical school graduates; and there is a Vice-Dean who is responsible for alumni relations.

6. Teaching and Learning Outcomes:

Students did not recall receiving a syllabus in some clerkships and reported relying on their notes from the Year 4 Introduction to Clinical Medicine course as a guide to what they should be learning on the clerkship. The syllabi have a superficially stated set of learning objectives and often include a list, sometimes exhaustive but not realistic, of conditions to be studied. A typical syllabus, has four learning objectives: diagnose common diseases; choose an appropriate treatment protocol; learn the risks and success rate of each treatment; learn to interpret laboratory and imaging findings. These materials are not appropriately specific guides for meaningful student learning. It follows that at HUJI student assessments are not linked to specific expectations for learning outcomes.

Preclinical courses are composed primarily of frontal lectures. Many preclinical courses involve medical, dental, and other students. The total number of students can be as many as 300. Multiple-choice questions are the sole means of evaluation in most of these courses. Students feel that many examination questions focus on details and do not test major concepts.

Other types of assessment are used less frequently, but laboratory practical exercises do comprise 5-40% of the grade in the courses in anatomy, organic chemistry, pharmacology, and 100% in physiology. The Man and Medicine course includes discussion-based learning and written reflections that are reviewed by faculty tutors, an OSCE for formative assessment midway through the year, and a summative OSCE at the end of the year.

In Years 4 and 5 in many clinical departments, there now are 13-14 students at a time. This inhibits opportunities for direct observation of clinical skills by faculty and residents and limits an individual student's ability to participate in bedside examination, presentation, and discussion. The student role in the daily work of the department tends to be observational and relatively passive. Students need to learn active patient management principles by participating in the daily work of the ward.

An OSCE following the Year 4 Introduction to Medicine, Pediatrics, and Surgery is presently the only performance-based assessment in the clinical years that has either a formative or summative purpose, a significant deficiency in the clinical educational program.

During the major clerkships, interval formative feedback is received via review of patient write-ups with the tutor, a minimum of two per week for internal medicine and pediatrics. In some clerkships, notably pediatrics, students are consistently observed performing a history and physical. This varies in other clerkships. Some, e.g. OB/GYN, have a formative written examination in mid-clerkship; and in clerkships where there is an ongoing student/tutor relationship ongoing feedback is appropriately provided.

Though students have ample opportunity to practice some basic procedural skills such as phlebotomy, opportunities to learn and practice some examination procedures in the clinical setting are limited; and there is very little use of clinical simulation.

Clerkship final evaluations during Year 4 are determined by multiple-choice examination with an opportunity for bonus points in the final evaluation based upon performance and participation on the clinical unit. In Years 5 and 6 the final evaluation is pass/fail, based upon observation by the faculty and residents of general performance.

For the last four years, the mean scores for HUJI students on the Israeli national examinations are indistinguishable from overall national mean scores.

Preclinical courses are evaluated using a university-wide web-based system that is not well suited to some of the features of medical school coursework, e.g., having multiple lecturers for single medical school courses. A specific problem with the medical school's internal evaluation system is discordance between the faculty listed and those that students have actually encountered on a clerkship. Though student evaluation results are communicated to department heads/chairs and there is annual public recognition of outstanding teachers, assistance to faculty with low ratings is lacking given the present limitations of the Center for Medical Education.

Seminars aimed at enhancing faculty teaching skills offered through the Center for Medical Education reach a limited segment of the faculty. A more strategic approach is needed to reach those who most need educational quality improvement .

Some who have important roles in teaching medical students, such as ambulatory clinical preceptors and graduate teaching assistants, are not routinely included in the programs of the Center for Medical Education. The Center has been without dedicated leadership for three years. Maintenance of an active series of faculty development seminars under these circumstances is laudable; but plans for curricular change will require significant expansion of these resources.

7. Research:

HUJI is known worldwide as a leading biomedical research institution and excels by metrics of research productivity such as publications, competitive grants, and prizes. The record, including international awards, e.g., two Wolf prizes in 2008, is excellent and competitive with the best universities and medical schools in the world. In 2013, there were 228 publications by the 72 preclinical faculty in high-quality journals. For competitive grant awards, the Faculty of Medicine as a whole submitted 155 applications in 2012-2013, with a 17 percent funding rate; but the funding rate has been going down since 2008-2009, when it was 32 percent. Total awarded funds have not declined, suggesting there has not been a downturn in available funds and that a few faculty members are doing extremely well.

The integrated Faculty Institute for Medical Research Israel-Canada (IMRIC) includes several Research Hubs in various fields; and there are plans for an Institute for Translational Research that would have overlapping interests with IMRIC. The Committee felt this might reflect lack of coordination or collaboration between the preclinical faculty, in which IMRIC is located, and the clinical faculty.

The self-evaluation report noted several important weaknesses including: out-of-date research infrastructure at the Faculty, e.g., the animal facility and the mouse transgenic unit; declining number of academic positions in the Faculty; and declining competitiveness in hiring new Faculty.

For preclinical faculty balancing teaching and research, and for clinical research faculty balancing teaching, research, and patient care are major problems. Uncompensated research time has led to extraordinary efforts by some clinical faculty to do research during “off” time from their full clinical load. Hadassah used to offer more research time than other health care providers in Israel and was criticized publicly for this practice during the financial crisis.

Though the overall rate of publication in prestigious journals by non-clinical faculty has remained about the same over the past 5 years, the decline in grant funding rates and difficulty in attracting MD/PhD students suggest the faculty is stronger in the quality of its long-term, very distinguished members and traditional pursuits than in new fields of inquiry and the development of younger outstanding faculty.

Though the MD/PhD program was revised after 2008, following a decline in the number of students, it continues to attract few students. The preclinical faculty has been very resistant to changing the curriculum and teaching practices. An important reason for considering significant change in the content and conduct of the preclinical basic sciences curriculum might be to encourage student inquiry and general interest in research through much more interactive methods oriented towards problem-solving. There also does not appear to be a syllabus for graduate-level science courses suitable for MD/PhD students. Another possibility for enhancing the program might be through the medical school admissions process. For example, the Faculty might seek out individuals who show an interest in becoming researchers or perhaps even try to look for personality characteristics that might predict a strong interest in research activities.

Typical support is two years for the PhD research project for HUJI MD/PhD candidates. The student is expected to complete the project during the ensuing clinical years. By worldwide standards and experience, two years is an extremely short time to generate a PhD, and the projects that can be given the student must necessarily be geared to be short-term. Indeed, outside of Israel, we know of no other PhD program in the developed world with such a short period of study/research. This two-year timetable is not universal in Israel; and this may be a factor in the non-competitiveness of the HUJI MD/PhD program. Furthermore, the

HUJI MD/PhD students are expected to continue writing up their PhD theses during the time they return to clinical studies as fourth year medical students. The transition from the PhD period to the medical curriculum is an extremely difficult and stressful time for MD/PhD students. The expectation that during this time they will also write a PhD thesis is likely a detriment to the students' medical studies and scientific capacities.

Given the long-term decline in the MD/PhD program and the failure of reforms to stem the decline, we feel that the HUJI program has to become more competitive, innovative, and attractive to potential candidates. One possibility might be to offer an enhanced opportunity to a smaller number of MD/PhD candidates including a longer period as a PhD student, and a significantly enhanced financial stipend for that period.

8. Infrastructure:

The self-evaluation report noted that lecture hall space was at a premium given the number of schools and programs that co-exist on the Ein Kerem campus. The Committee was also told that lecture halls are modern and well-equipped: there are six halls or auditoriums in the Faculty that have a capacity of more than 175 persons. A committee decides on equipment for new classrooms as they are built to help keep up with the state of the art, and there is a service to make sure that all equipment necessary for classes is present. There also are numerous meeting rooms within Hadassah Hospital.

The Committee was quite impressed with the renovated Library. It is a modern and actively used study center with excellent access to electronic journals and other information sources and a variety of creatively designed rooms and spaces for use by individuals and small groups. The operations of the Library seem very student-oriented. There is both local and remote access to electronic journals. The information technology infrastructure including educational, research, and administrative portals, is available wherever a person authorized to log into it might be located.

The multi-media center, led by an individual with enormous experience making videos for teaching purposes, is a valuable asset that has been relatively underutilized given its potential.

For students in research programs, there are some classes on uses of various types of equipment, e.g., electron microscopy, cell-sorting.

The Committee was told that there were some serious issues with the animal facilities (see Research section). Nonetheless, except possibly for the animal research issues, the Committee does not feel that infrastructure problems are a major impediment to medical studies at HUJI.

9. Self-evaluation:

The Committee found the self-evaluation report helpful in preparation for its visit and thanks Professor Shlomo Sasson for leading the self-evaluation process; Shelley Perlman-Azran for the English editing; and all of the many faculty members who contributed to the report.

Dean Lichtstein, who took office in October, 2013, has started a strategic planning process for the medical school curriculum. The Committee hopes that this process will help drive change and that in the future self-reflection and evaluation will be linked to assessment of whether the Faculty is meeting its strategic goals and plan, a process that should chronicle not only successes but also problems and failures. Self-critical review should be iterative, done at least every 1-2 years, not just when needed for external review.

10. Additional comments:

Major changes are taking place in the nature of medicine, the nature of Israel's population, and the numbers of physicians who serve the community. Medical schools must adjust their curricular goals and teaching programs so that the country will not face catastrophic gaps in health care coverage. Since there is more than a ten year gap between acceptance of a medical student to a faculty of medicine and his/her entering the workforce, changes in medical education must take place immediately to meet the country's needs.

Medical care is moving increasingly out of hospitals into the ambulatory sector; segments of the population are aging; there are increasing rates of chronic illness at all ages; the older physicians staffing primary care clinics are heading towards retirement; and the number of graduates from Israeli medical schools entering primary care is unacceptably low. This set of issues must be addressed by all involved parties (government, sick funds, medical organizations and medical schools).

HUJI has an even greater constraint on teaching beds than the other medical schools in Israel and would benefit from stimulation of primary care and specialty ambulatory care. Hebrew University could use its long-standing reputation as a leader for addressing the national need.

The Committee heard a variety of conflicting reports from leaders about the ways the Faculty of Medicine generates funds and takes on teaching loads vs. the ways it receives funds for teaching. The budgeting process, though said to be transparent, appears to be complex and opaque. This inhibits important modifications of the medical study programs.

Effective medical school learning generally requires teaching small groups of students in order to attain a high level of competence in both knowledge and skills.

Physicians must not only launch their careers with very high levels of competence but have highly developed lifelong learning skills. HUJI must seriously consider how it is going to support teaching methods being recognized as essential elsewhere, particularly if it wants its educational quality to compare with those of other highly reputed schools around the world.

NOTE: In a spirit of quality improvement, the Committee has developed a set of recommendations keyed to the subject areas above. These are aggregated in Chapter 4. The Committee urges readers to examine the recommendations carefully and hopes they will be particularly helpful to Hebrew University and the HUJI Faculty of Medicine.

Chapter 3B: Full Observations, Findings, and Recommendations:

1. Mission and Goals

- Observation and findings

The Committee was impressed with the degree of commitment and dedication on the part of HUJI's leadership, faculty, students and administrative staff. The groups with whom we interacted were intelligent, hardworking and caring.

The stated mission of HUJI is to "train physicians who upon graduation have acquired the knowledge, skills, and professional behavior that will enable them to provide humanistic care, practice excellent clinical medicine and demonstrate competence in research."

This is an admirable and complicated mission. It may need rethinking or specification so that it is implemented consistently throughout the medical study program. For example, what does it mean for each medical school graduate to "demonstrate competence in research"? The school's mission would be better served if there was alignment among the faculty regarding the necessary research competencies for every student, regardless of whether the student pursues research after training. The Committee was given the impression that much of the preclinical faculty value exclusively certain kinds of research, and that there is pressure on students to obtain a PhD rather than to acquire the competency to understand and interpret research for the benefit of their patients. This is just one example of mission misalignment.

Many of the faculty and student leaders have excellent ideas about how to improve medical education at HUJI. Unfortunately, the structure of the institution does not facilitate changes and innovations in medical education that stem from a vision of the ideal physician graduate. Instead, it seems that each group of faculty advocates separately for various resources and approaches without necessarily understanding the impact of such resource distribution on the whole educational process.

In addition, the mission has not been adequately communicated to the faculty and students in order to reinforce the important pedagogic principle that one should set expectations for learners in advance of teaching them. This principle holds for the Faculty itself: the mission should be a clear and widely understood statement of expectations for HUJI that should, in turn, drive the institution's teaching and learning.

- Recommendations
 - a. Short term/immediate (~ within 1 year)
 - Refine the mission of the Medical School and communicate it to the entire community, including faculty and students. As the curriculum is being re-evaluated and resource allocation decisions are being considered, have explicit discussions about the aspects of the mission that will be affected by the changes.
 - The University should empower those who have direct leadership responsibilities for medical education to make decisions about curricular changes and resource allocation to support them.
 - Identify and remove the barriers and disincentives to innovation in medical education that arise from policies of the University and its affiliates, e.g., appointment and promotions policies (see Section 4, Human Resources/Faculty).

2. Organizational Structure

- Observation and findings

The Hebrew University (HUJI) Faculty of Medicine is one of seven Faculties of the university, and encompasses the schools of Medicine, Pharmacy, Public Health and Community Medicine, Nursing, and Occupational Therapy. The School of Dental Medicine is served by a separate faculty but is also relevant because of overlap in the preclinical curriculum between the medical and dental schools and in the preclinical teaching responsibilities of the Faculty of Medicine.

The self-evaluation report outlined the overall University structure, showing that the dean of the Faculty of Medicine is responsible to the Rector, who in turn reports to both the President and the Senate. The dean is elected for a four-year term of office; by tradition the deanship rotates between preclinical and clinical sections of the Faculty. The dean recommends appointment of vice-deans and appoints the chairs of the Faculty's committees, organized into clusters of teaching, research, development and evaluation, and promotion, respectively. The dean is also head of the school of medicine.

An important aspect of the structure of the medical school is that the preclinical and clinical components appear to operate semi-autonomously. The budget is split into a portion relating to the first three years of medical school that goes to the preclinical faculty of Hebrew University and a portion relating to the second three clinical years that goes primarily to Hadassah. The medical students are examined for, and awarded a BSc degree at the end of their third year, subject to completion of a graduate seminar paper. The final exit MD degree is given at the end of seven years, subject to completion of a thesis and the internship year (stage).

The formal committee structure noted above reflects, in at least two instances, the separation between the preclinical (University) and clinical (Hadassah) components. One such instance is at the level of appointments and promotions, where there are separate committees and in many respects separate expectations of the faculty. In the planning and management of the study program there have been separate Pre-Clinical and Clinical Committees in the past. This separation was described as having “deterred fruitful interactions...” and “precluded productive integration....” Therefore a single Teaching Committee was formed in October 2013 and is beginning to consolidate responsibility for the overall curriculum.

There is also an *ad hoc* Advisory Committee on Review of the Curriculum, with a mandate to undertake a strategic review of the curriculum and suggest “advanced models of integrated medical studies....” This development was mentioned and welcomed many times by senior preclinical and clinical staff. It remains to be seen if the *ad hoc* Advisory Committee and the single Teaching Committee will serve as effective instruments for cooperative change, or if they will be duplicative of each other and of the existing committees. We were impressed by the informed and intelligent leaders of these committees and hope that they will effect positive changes.

The increase from 642 medical students in 2008-2009 to 906 medical students in 2012-2013 due to the new Tzameret military medicine program represented a significant challenge and opportunity for the curriculum committees to re-evaluate educational practices. However, it seems that during this period of time the Medical Humanities course, an excellent addition to the curriculum, was the only important innovation, and it was attributed to a response to the 2007 CHE review.

Students are now represented on curriculum review committees by invitation only. They contribute to discussions, but are unable to vote. There seems to be a recurring cycle of representations and submissions to committees without much evidence of substantive action. Both the self-evaluation report and the Committee’s discussions indicated lack of action. The reason(s) for this inertia, while not entirely clear, may be a need for higher approval, e.g., by the Faculty Council, or due to resistance from the faculty at large.

The dean stated that he has a considerable degree of discretion available to him for new initiatives. He hopes that his plans for change in the study program will be supported not only by the faculty who advocate such change already, but also by those who have been more resistant to change.

There is a contract between Hebrew University and Hadassah Hospital. The medical school also uses Shaare Zedek and Kaplan Hospitals. According to a 2012 report for the National Institute for Health Policy Research, HUJI has more students per available teaching bed than any of the other medical schools in Israel. Educating its

large student body would be better accomplished with additional hospital beds as well as more ambulatory teaching sites.

- Recommendations

a. Short term/immediate (~ within 1 year)

- Forward the final report of the *ad hoc* Advisory Committee on Review of the Curriculum to CHE before December 31, 2014.
- Negotiate with hospitals and sick funds for additional teaching facilities in order to accommodate the requirements of the study program.
- Develop clear lines of authority and purpose for each curriculum subcommittee and one central committee overseeing the subcommittees.

b. Intermediate (~ within 2-3 year)

- Ensure that the School of Medicine has an efficient process in place for the continuing development and structuring of the entire curriculum with effective and efficient interaction between preclinical and clinical components. For example, consider having one central committee that oversees a set of subcommittees, each of which has a clear line of authority and purpose.
- Ensure that recommendations for change in the curriculum are implemented promptly.
- Reevaluate the system for election of dean, to eliminate the absolute requirement that deans rotate between clinicians and basic scientists. Such a change would give more flexibility and opportunity for selection of the best candidate regardless of his/her faculty category.

3. Study Programs

- Observation and findings

Introduction

The Medical School offers two MD programs: the regular 6-year program and the 6 year Military Medicine (Tzameret) program; the latter prepares doctors to serve in the Medical Corps of the Israel Defense Force. The degree of Bachelor of Medical

Sciences (B.Med.Sc.) is awarded after successfully completing the first three years of both programs. In addition, selected students may take a break from their MD studies to complete MD/MSc, MD/MPH or MD/PhD programs. According to Table 2.4 of the self-evaluation report very few students have taken these joint courses.

The Committee understands that some changes in the preclinical curriculum may affect the dental or biomedical science students and further understands that change could have significant financial implications. In spite of those issues, the Committee believes that this interdependence of study programs should not prevent considering needed changes in the MD educational program. The Committee believes it is possible to explore creative approaches to minimize the negative impacts on dental and biomedical science students.

Summary of Program Content

6-Year Program

Years 1-3 (Pre-clinical) are based at the Ein Kerem Campus of Hebrew University with two days a week at the Givat Ram Campus in the first year. This requires considerable travel for the entire student body in the first year, instead of a significantly smaller number of faculty traveling from Givat Ram to Ein Kerem. In addition, the faculty of medicine has minimal authority over the content or delivery of the courses given at Givat Ram.

Year 1 is a combination of natural sciences, life sciences and introductory subjects for medical studies. There is some ability to vary these subject requirements depending on the students' previous achievements.

Year 2 consists of preclinical studies including anatomy, physiology, biochemistry, pathology and histology. The last of these is being changed to include digital imaging.

Year 3 has more clinically oriented studies in biochemistry, physiology of systems, pharmacology, microbiology, histology and pathology. Notably, clinical microbiology is taught in small groups utilizing hospital based microbiologists.

There are a number of courses in the preclinical curriculum that bridge the pre-clinical and clinical world and introduce students to the life of the doctor. These include medical law, family medicine, evidence-based medicine, and an introduction to public health.

Unfortunately, most of the preclinical courses are taught using traditional frontal lectures with little active learning or student engagement. Many established adult learning concepts³ - such as the increased understanding and retention of knowledge that is gained through problem solving and active learner engagement - do not seem to be accepted by many of the basic science educators.

³ See: Powell K. "Spare me the lecture". *Nature*. 2003; 425: 234-236. doi:10.1038/425234a Available at: <http://www.nature.com/nature/journal/v425/n6955/full/425234a.html>

In addition, the Committee's understanding is that the choice of what content should be taught to students is not guided sufficiently by relevance to their needs as medical students but rather by the perspectives and individual expertise of the faculty member. There is no curriculum accommodation to the varied academic backgrounds of the students, and to the different science courses needed by students who are going on to a PhD. Furthermore, many pedagogic innovations that now dominate medical education programs internationally are still not employed in HUJI.⁴

In stark contrast to such traditional practices, there are some outstanding exceptions that have been highly successful at HUJI. These have been developed by enthusiastic and effective champions of change in medical education. Such efforts are highly valued by the students who feel that these courses have prepared them well for their further education and training. One example is the microbiology teaching program in which a member of the preclinical faculty has engaged clinical colleagues to help with small-group interactive problem-based learning that integrates basic science with clinical science.

The Man and Medicine course is taught in Years 1-3 and emphasizes communication skills and the ethical and socio-cultural aspects of health and illness. Students also visit patients at home and write a reflective journal on their experiences. This course is taught by members of both the School of Medicine and the Faculty of Humanities. For several years there has been a desire to expand this program into the clinical years, but this plan has not been realized.

Other highly commended courses that are more clinically integrated and are taught using sound pedagogical methods include, but are not limited to, histology, anatomy, evidence-based medicine and public health.

Years 4-6 (Clinical) are based mainly at the Hadassah Hospitals at Ein Kerem and Mount Scopus but also at Shaare Zedek, Kaplan, Herzog and Eitanim Kfar Shul Hospitals, and the Talbiyeh Clinic.

Year 4 begins with a 12 week introduction to clinical medicine course, taught primarily by frontal lectures, and then clerkships in internal medicine, pediatrics, and surgery. The year also includes a two week course/clerkship entitled, "Ambulatory Care in the Community".

Year 5 consists of rotating clerkships through a number of disciplines.

Year 6 includes compulsory clerkships in internal medicine, pediatrics, and family medicine together with a trauma course and introduction to infectious diseases. In addition, students must take four selective clerkships in sub-specialties of medicine

⁴ Nara N, Suzuki T, Tohda S. "The current medical education system in the world". J Med Dent Sci. 2011;58:79-83. Available at: http://lib.tmd.ac.jp/jmd/5802/07_Nara.pdf

and of surgery. In common with other medical schools, the 6th year has been shortened to 6 months.

Teaching methods in the clerkships include frontal lectures, bed-side teaching, and case discussions, and also include being in the emergency room and outpatient clinics. Students present patients at ward rounds as well as perform some minor technical procedures such as blood drawing. Although there has been some increase since the 2007 CHE report, the proportion of teaching in ambulatory settings during the clerkships remains very low. Students told the Committee that the emergency room placement was most interesting and enjoyable.

There is an obligatory two-week experience in family medicine in the 6th year, and a quarter of the medical students in the 5th year also have a two-week family practice experience during an ambulatory medicine clerkship.

National examinations are taken at the end of the fifth and sixth year. Also, students must participate in the Graduate Seminar process to complete the B. Med. Sc. degree and must submit a MD thesis to complete the MD degree requirements. The MD degree is awarded after completion of the Year 7 internship (stage).

Tzameret Program

This program follows a similar pattern to the 6-year program. In addition, students take specific courses in military medicine and in military training. The latter take place during the summer breaks. The first cohort will graduate in 2016. Students in the Tzameret Program, like those in the regular non-military 6-year program, can enter the MD/PhD program. Family practice clerkships are taken in military clinics where the teachers are not necessarily family medicine specialists.

Comments

The Medical School has a policy of reviewing the curriculum following the appointment of the new dean every four years. A committee headed by Prof. Arie Ben-Yehuda is currently undertaking this review with the aim of early implementation. The topics covered in the review include a) integration of clinical topics into the pre-clinical years and vice-versa, b) development of the pre-clinical course into a systems approach and the use of clinical cases to illustrate topics being discussed, c) changing from teaching based on frontal lectures to an approach involving more team work and problem-solving, d) extending the medical professionalism program with the aim of teaching students defined competencies, e) extending the "Man and Medicine" course throughout the whole program, f) increasing recruitment to the MD/PhD program, g) restructuring the Medical Education Center (which currently does not have a director) and h) increasing the number of international exchange opportunities. We support these features of curricular reform.

The self-evaluation report's description of work "to emphasize and further develop aspects of 'Medical Professionalism' within the study program" is limited. It is stated that "students will practice to master the myriad proficiencies required in the routine work of physicians. They will be trained to consult with a patient, on how to assess clinical presentations, how to order investigations, and then to make differential diagnoses. They will also learn the methods of immediate treatment for medical emergencies, including first aid and resuscitation as well drug prescription with the utmost vigilance for drug interactions and dangers of poly-pharmacy." We are concerned that this reflects a lack of comprehensive understanding of the nature and importance of professionalism in both medical education and practice.⁵ Since there are HUJI faculty members with deep expertise in teaching medical professionalism, they should be involved in all levels of curriculum development and implementation.

The Medical Student Association helps foreign students attending HUJI. The Committee commends these efforts.

The Committee was informed that elective clerkships undertaken by HUJI students in other countries are not recognized, i.e., no academic credit is offered for their electives by HUJI even though other Israeli and Western medical schools recognize such international experiences. This policy remains unchanged in spite of repeated student requests.

- Recommendations
 - a. Short term/immediate (~ within 1 year)
 - The Committee believes that it is unnecessary to wait for yet another internal or external review before implementing some of the desired changes to the curriculum outlined in the self-evaluation report. It is imperative that the precious resource of faculty teaching time and energy be mindfully employed and supported. Changes should include but not be limited to:
 - Expansion of professionalism education across the curriculum, including the development of the Man and Medicine course in the clinical years.
 - As part of the expansion of the professionalism program, there should be an increased focus on social justice, and the students should be

⁵ See: Medical Professionalism in the New Millenium: A Physician Charter. Accessible at: <http://www.abimfoundation.org/Professionalism/~media/Files/Physician%20Charter.aspx> This document, dating from 2002, has been endorsed by over 100 organizations around the world including the Israeli Society of Internal Medicine. Commitment to professional competence, including lifelong learning, is an important component but only one of ten commitments listed in the Charter, all of which should be represented in curricula and modeled by faculty and staff. The Committee understands that different societies and religions may place different emphasis on various ethical values included in the concept of professionalism, but the concept remains very broad.

given ample opportunity to be involved in medical social justice projects. Professionalism is not an elective or isolated concept: it is the core of professional education and lifelong learning.

- Adoption of sound pedagogic teaching techniques by all teachers and in all courses. This should include small-group problem solving, assessment that relies on integration of knowledge rather than memorization, and increased use of technology including multimedia and online learning.
- Integration of clinical medicine into the basic sciences and vice-versa. Many such changes have been implemented in individual courses by innovative HUJI basic science and clinical educators; these changes need to be supported, expanded, and spread throughout the entire curriculum. Barriers to implementation should be identified and overcome. Specifically, there needs to be an end to the dysfunctional system of agreeing to necessary changes in subcommittees but failing to act on such changes as they pass to higher committees and bureaucratic hierarchies.
- Further increase teaching in the ambulatory setting.
- There needs to be a robust program to teach patient safety and quality throughout the curriculum. There is no need to invent this curriculum as there are other institutions that are already teaching this. Consultation with MSR, a national resource that has a major interest in fostering greater patient safety and quality of care, might be helpful.
- The faculty of medicine needs to have significant authority over the content and delivery of all of the courses including those given at Givat Ram.
- The faculty at Givat Ram should travel to Ein Kerem to teach rather than requiring the entire first year student body to travel twice weekly to Givat Ram.
- Students should be given academic credit for electives at appropriate, accredited foreign medical schools.
- Operationalize the proposals above before the end of 2014 with a view to implementation in academic year 2015-2016.

b. Intermediate term (~ within 2-3 year)

- Rethink the basic science knowledge and skills needed for all graduating physicians. Critical thinking skills, including evaluation of scientific evidence,

must be emphasized. In the course of this re-thinking, the special needs of the future physician-researcher should not be neglected.

- Shorten/eliminate/reconfigure preclinical courses so that the curriculum is more relevant for all medical students.
- Reconsider the possibility of moving the teaching of basic sciences fully or partially to a systems approach. This method is being used increasingly with great success among leading schools in the Western world, and is educationally sound.
- Consider separate tracks for basic science courses depending on the academic background of the student, and on whether the student plans to enroll in a PhD program.

4. Human Resources / Faculty

- Observation and findings

Numbers of Faculty and their Preparation for Teaching

The teaching staff is composed of two components, the preclinical staff employed by Hebrew University and the clinical staff employed by Hadassah Hospital, other affiliated hospitals, and clinics.

The senior preclinical staff consists of 72 teachers. This is significantly below the 1998 total of 107 in spite of the major increase in medical students as a result of the creation of the Tzameret military medical program. The increase in the number of students, unmatched by a concomitant increase in teaching staff, is problematic.

There are roughly 250 clinical staff at Hadassah Medical Center and 50 at other institutions who have academic appointments. There are some 900 clinical teachers in total, but two-thirds of this total have no faculty appointments and teach on a purely voluntary basis.

We met with both preclinical and clinical teachers at both senior and junior levels. The senior basic scientists were of the highest caliber academically with impressive research records and a clear commitment to professional excellence. With some notable exceptions their commitment to teaching seemed of lesser priority for them, and several expressed some skepticism about the need for and effectiveness of proposed changes in curriculum and teaching methods.

The senior clinical teachers that we met were uniformly outstanding. In spite of the recent serious hospital crisis, they seemed optimistic and enthusiastic. They were clearly committed to their teaching role, and they expressed positive recognition of

the present efforts to reorganize and modernize the curriculum and teaching methods.

We met with a number of the clinical assistants and junior faculty. We found them to be positive about their work, their academic environment, and their responsibilities. In their opinion, the support and startup funds they received from the school upon their return from postdoctoral training were quite satisfactory. In the first year of their return they were free from significant teaching responsibilities so that they could organize their laboratories, apply for grants, and recruit staff. Some complained about a heavy teaching load in the second year after joining the Faculty, particularly since most had to teach subjects out of their area of expertise due to a lack of teachers in the particular subject. Most were quite successful in obtaining research grants, and all felt that their economic and general institutional support were more than adequate. They were impressively upbeat about their roles in the institution and optimistic about their future academic status.

We heard little or nothing about efforts to recruit faculty members outside the realm of the basic sciences, and in this regard there seemed to be a narrow definition of the basic sciences, with little mention of subjects in the behavioral sciences, social sciences and epidemiology.

The Center for Medical Education was reduced to a staff of two, an administrator and a secretary, and for several years there has been no faculty staffing of this important center. This lack is a serious problem, particularly in view of the perceived need to make major changes in the curriculum and teaching methods that will require a strong faculty development program. See also "Faculty Development for Teaching" in Section 6, Teaching and Learning Outcomes.

Recruitment and Promotion Policies

In the self-evaluation report we are told of the criteria for recruitment: "excellence in research, the candidate's field of research, and the fit of this research area with the teaching needs of the Faculty". No mention is made of quality of teaching. Yet, these faculty members are expected to teach. Either they need to be capable teachers at the outset or their ability to teach should be explicitly developed and evaluated.

We were informed repeatedly by individuals at all levels that quality of teaching is given minimal consideration in promotions of faculty. That should not be the case. There should be an explicit, formal, and strong emphasis on teaching for all promotions.

There is an existing promotional track for those whose academic achievements are in teaching and educational leadership, but it is perceived by many of the faculty to be second class. In the leading medical academic institutions in the world, there now are academic rewards for expertise in teaching and educational leadership. The requirements of scholarly output and national and international reputation should

be upheld, but there need to be different measures of such requirements. For example, innovative curriculum development should be counted towards promotion. . The current HUJI promotion policy may promote more research publication, but it does not enhance the role of HUJI as a leader in medical education.

The self-evaluation report describes a variety of workshops related to faculty development, teaching performance and medical education. Remedial help for teachers needing improvement are also mentioned. However it is not clear to what extent these are mandatory and to what extent faculty members take advantage of these workshops. In view of the current staffing of the Center for Medical Education it is likely that the entire program of workshops and remedial help cannot function at an optimal level.

The great majority of clinical teachers teach voluntarily and do not have academic appointments. This is particularly true of physicians in the community. Since it is obvious that an increasing proportion of clinical teaching must take place in the ambulatory sector, the present lack of recognition of community physicians is not tenable.

- Recommendations
 - a. Short term/immediate (~ within 1 year)
 - Develop the Center for Medical Education
 - Recruit a director for the Center with expertise in medical education
 - Staff the Center to meet the needs of the new curriculum
 - Ensure that there is a program of faculty development activities for all faculty
 - Ensure that faculty whose performance merits remediation receive appropriate services
 - Revise the criteria for academic appointments, with greater emphasis on teaching innovation, clinical skills and leadership⁶
 - b. Intermediate term (~ within 2-3 year)
 - In areas where teaching is currently done by persons who do not have expertise in the specific subject, find alternative teaching resources such as clinical faculty who do have such expertise.

⁶ Some of the most highly reputed universities in Canada, the United Kingdom, and United States have decided it is important to recognize not only traditional research excellence but scholarship in medical education and clinical care. As a first step, HUJI should investigate the criteria for academic appointments and promotion at such institutions. For example, see: Harvard Medical School and Harvard School of Dental Medicine. Criteria for Appointment and Promotion. Available at: <http://facultypromotions.hms.harvard.edu/promotions.pdf>

- In promotion of research faculty, teaching competence must be a factor. Poor teachers should not be promoted, regardless of scientific productivity.
- Develop ways to reward clinical teachers including those in the ambulatory and primary care sectors.

5. Students

- Observation and findings

Admissions

The School of Medicine admits about 110 students to the 6 year program and about 65 to the Tzameret program. Applicants to the latter program are able to apply at age 18 after leaving high school; those applying to the 6 year program will have had military service and are therefore older.

The admission criteria are based on the matriculation scores and the standard psychometric scores. The top 400 students undertake multiple mini-interviews. The Tzameret admission process is similar but applicants are screened first by the Israel Defense Force. The Medical School prefers the use of faculty rather than actors in the interview process believing this to be important in linking members of the Faculty more closely to the admission process. Faculty involved in this process undergo training.

The School also has a policy of admitting 5-6 students from disadvantaged backgrounds. The Committee was informed that all students admitted under this program had successfully obtained both the B. Med. Sc and MD degree.

Career Paths

We did not receive information on final career pathways. There does not seem to be any formal career advising for students, and it is the Committee's impression that this needs strengthening.

The number of dropouts is small ranging from 1 to 6 per year over the last 5 years.

Work Opportunities

The Committee was informed that there were a limited number of opportunities to undertake paid employment as a physician assistant. The number of these opportunities has been limited for financial reasons. When available these opportunities are useful to students as they are seen as providing more practical experience than some of the clerkships.

Some students are employed as teaching assistants for junior classes and are paid for this role.

Students have the opportunity to undertake placements in research laboratories during the summer breaks. The aim of these placements is to provide experience that might encourage students to apply for the MD/PhD program and to prepare them for the MD thesis that is undertaken in the clinical years.

Counselling and Related Services

The self-evaluation report describes a number of counselling services that are provided for students, though usually at the student's expense. Services are not available on the Ein Kerem campus but only at some other Hebrew University campus sites.

Students with learning disabilities are seen by a special unit and after individual assessment may receive various forms of support such as extra time to complete examinations.

Student Complaints

There is a student committee with representatives by year. Student complaints may be brought to the attention of year tutors. The Teachers-Students committee meets every 8 weeks. Complaints may also be brought to the attention of the Vice Dean for Teaching and the Chair of the Teaching Committee.

Students' major complaints listed in the self-evaluation report were delays in releasing exam grades, changing the order of exams, and teacher conduct.

The students said that the large size of teaching groups in the clinical clerkships prevented individualized feedback on performance.

The students are not full (voting) members of the Teaching Committee or curriculum subcommittees.

Other

Students appreciated the changes to the MD thesis component of the curriculum including the fact that there is now a more structured approach with clearly identified dates for the various stages of the project.

Students generally have highly positive feelings about the school. They value the administration and faculty who they see as committed to their education and well-being. Out impression was that they are engaged, enthusiastic, intelligent and compassionate. They feel able to voice their concerns and have several safe mechanisms to do so.

Student concerns center around the over-emphasis on basic science at the expense of other sciences without sufficient connection to clinical medicine; shortening of the clinical clerkships and the dearth of hands-on patient experience in some clerkships; the excessive number of students in each clerkship; the structure of some clerkships that lack focus on what is most important for students to learn; the perceived lack of emphasis and opportunities to be involved in social justice activities.

Students reported understanding and being supportive of the Hadassah physicians with regard to the recent financial crisis. At the same time, those students on clinical clerkships at Hadassah during the strike felt shortchanged educationally. It is the Committee's impression that the students would benefit by more proactive, regular communication from the leadership of the university and the Faculty.

Financial Assistance

The students felt that the scholarship funds available are too low to make a meaningful difference.

Alumni

The Alumni Association is for all graduates of the Faculty of Medicine, not just the Medical School. There is a Vice Dean responsible for alumni relations. The principal method by which the Faculty of Medicine keeps in touch with its alumni is through a website (presently only in Hebrew). The email addresses of 1700 alumni had been identified and 50 percent had opened the web-site.

The Alumni Association is planning to fundraise for a Simulation Center. This is an appropriate target for alumni funding and a laudable effort; but the Committee wishes to emphasize that clinical simulation resources are a necessity for contemporary medical education and thus should be a priority for funding at the Faculty and university levels. Moreover, effective teaching through simulation requires considerable capital and faculty resources at a level unlikely to be achieved solely through alumni contributions.

- Recommendations
 - a. Short term/immediate (~ within 1 year)
 - Improve proactive communication between the University and the medical students, especially at times of change. The dean should have regular meetings with the student body, not just the student representatives.
 - Organize a process to provide career advice for medical students.
 - Make the students full voting members of the appropriate committees relating to education.

- Reconsider using HUJI faculty for interviews in the admissions process as it may not be an efficient use of faculty time. There is a successful example of an alternative process at MSR that is utilized by other Israeli medical schools

b. Intermediate term (~ within 2-3 year)

- Provide ample opportunities for students to take positions as physician assistants. Design those positions to be not just work but also educational opportunities.
- Consider increasing support for and access to positive lifestyle activities such as exercise facilities.

6. Teaching and Learning Outcomes

- Observation and findings

Curricular Competencies and Learning Objectives

The Self Evaluation Report reproduces the Learning Outcomes promulgated by the Tuning Project (Medicine), <http://www.tuning-medicine.com/index.asp>. This document was created within the EU to provide common language for medical education in Europe.

The Self Evaluation Report presents the Tuning Point's Level 1 and Level 2 learning outcomes as the basis for the HUJI curriculum. However, most students and faculty are unaware of these general learning objectives. There is an awareness of the intent to create such a framework as part of the impending curriculum renewal. This intent, and the early stage of development of this competency-based framework at the present, was confirmed in discussion with curricular leadership.

The learning objectives for individual courses and clerkships as provided to the Committee are superficially stated and not explicitly related to the Level 1/Level 2 learning outcomes of the Tuning Project. Students did not recall receiving a syllabus at all in some clerkships and reported relying on their notes from the Year 4 Introduction to Clinical Medicine course as a guide to what they should be learning on the clerkship. The syllabi that were provided to the Committee are skeletal, with a limited number of learning objectives, not presented in detail, followed by a list, sometimes exhaustive but not realistic, of conditions to be studied. For example a typical syllabus has four learning objectives: diagnose common diseases; choose an appropriate treatment protocol; learn the risks and success rate of each treatment; learn to interpret laboratory and imaging findings. The Committee does not find

these materials to be appropriately specific guides for meaningful student learning. Once developed, the appropriate materials must be made readily available to students, e.g., via the Internet, and form the basis for an introduction to the Faculty's expectations for students at the outset of each course and clerkship.

There being no consistent learning objectives or overall curricular competencies, it follows that student assessments are not linked to specific expectations for learning outcomes.

Teaching Strategies and Student Assessment in the Preclinical Curriculum

As noted in the Study Programs section, preclinical courses are composed primarily of frontal lectures while small-group sessions are infrequent. Other interactive learning strategies amenable to incorporation into large or moderate sized group sessions, e.g., team-based learning, have not been utilized to date, with the exception of an audience response system ("clickers") now used by a few lecturers.

In addition, many preclinical courses involve not only medical but also dental students and others, such that the total number of students can be as many as 300. Given the resulting logistics of examination administration, multiple-choice questions are the sole means of evaluation in most of these courses. Students feel that many examination questions focus on details and do not test major concepts.

Other types of assessment are used less frequently, with laboratory practical exercises comprising 5-40% of the grade in the anatomy courses, organic chemistry, pharmacology, and several others, and 100% in physiology. The Man and Medicine course is notable for its inclusion of discussion-based learning and written reflections that are reviewed and commented upon by faculty tutors. This course also utilizes an OSCE format for formative assessment midway through the year and another summative OSCE at the conclusion of the year. These are the only opportunities for students to experience performance-based assessment during the preclinical curriculum.

Teaching Strategies and Student Assessment in the Clinical Curriculum

There is a general and significant concern among both faculty and students that the size of clerkship groups has become too large. In Years 4 and 5 in many disciplines, there now are 13-14 students at a time per department. This inhibits opportunities for direct observation of clinical skills by faculty and residents, and limits an individual student's ability to participate in bedside examination, presentation, and discussion.

The Committee also found the student role in the daily work of the department to be more passive and observationally oriented than is the norm in the UK and US. While it is important to have some learning activities specifically directed to the student level, we feel that the students also need to learn active patient management principles by participating in the daily work of the clinical unit. In one department we learned that students are not routinely welcome at clinical grand rounds, the

centerpiece of departmental clinical work, for lack of space and/or a belief that discussions there were beyond the level of student understanding.

There is an OSCE following the Year 4 Introduction to Medicine, Pediatrics and Surgery. This is presently the only performance-based assessment in the clinical years that has either a formative or summative purpose. The Committee believes not having more such assessments is a major omission in the educational program for HUJI students.

During the major clerkships, interval formative feedback is received via review of patient write-ups with the tutor, a minimum of two per week for internal medicine and pediatrics. In some clerkships, notably pediatrics, students are consistently observed performing a history and physical; this varies in other clerkships. Some, e.g. OB/GYN, have a formative written examination in mid-clerkship, and in clerkships where there is an ongoing student/tutor relationship ongoing feedback is appropriately provided.

Students have ample opportunity to practice basic procedural skills such as phlebotomy. Opportunities to learn and practice some examination procedures in the clinical setting are limited. For example, the typical student performs perhaps three pelvic examinations during the obstetrics and gynecology clerkship, often an examination under anesthesia (with explicit patient consent). There is very little use of clinical simulation, even simple task trainers such as pelvic or breast models, in this curriculum.

Clerkship final evaluations during Year 4 are determined by multiple-choice examination. There is opportunity for bonus points in the final evaluation based upon performance and participation in the clinical unit. In Years 5 and 6 the final evaluation is pass/fail and is based upon general performance observation by the faculty and residents. The final narrative evaluation in clerkships typically consists of a global rating of "excellent," "very good," etc. There are plans to add additional means of assessment in the Years 5 and 6 clerkships.

The Committee was provided with results on the Israeli national examinations for the last four years. The mean scores for HUJI students are indistinguishable from overall national mean scores.

Evaluation of the Program and of Faculty

There are multiple possibilities for evaluating the curriculum and recommending change. These have been discussed (See: Study Programs, section 3) as has ensuring student participation on committees.

There are web-based systems for student evaluation of the faculty in both preclinical and clinical subjects. The preclinical courses are evaluated using a university-wide system that is not well suited to some of the features of medical school coursework. For example, there often are multiple lecturers for one medical

school course, and since the system reportedly requires evaluating each lecturer, it becomes quite cumbersome for students. The medical school maintains an internal evaluation system for clinical courses and teachers. One specific problem with the internal clinical faculty survey system is that there is often discordance between the faculty listed in the system and those that students have actually encountered on the clerkship.

Results of the student evaluation surveys are communicated to department heads and chairs, and there is annual public recognition of outstanding teachers. Given the present limitations of the Center for Medical Education (see next section), assistance to faculty with low ratings is lacking.

Faculty Development for Teaching

A variety of seminars aimed at enhancing faculty teaching skills are offered through the Center for Medical Education. These sessions reach a limited segment of the faculty. There is a group, composed of both junior and senior faculty, who regularly attend seminars and account for a large proportion of attendance. The medical educators with whom the Committee spoke acknowledged the need for a more strategic approach, so as to attract to the seminars those who most need educational quality improvement .

Some who have important roles in teaching medical students are not routinely included in the programs of the Center for Medical Education, such as the clinical preceptors for ambulatory experiences who have recently been added to some clerkships. In addition, graduate teaching assistants are apparently not included in the invitation to participate in the faculty development programs, nor do they have any preparation for their role as teachers specific to their point in career development.

The Center for Medical Education has been without dedicated leadership since the departure of its Academic Director three years ago. The maintenance of an active series of faculty development seminars under these circumstances, thanks to the leadership of a faculty steering committee and the expertise of the Center's two-person staff, is laudable. Current plans for curricular change and other teaching and learning issues identified in this report will require significant expansion of the resources devoted to the Center.

- Recommendations
 - a. Short term/immediate (~ within 1 year)
 - Establish school-wide learning outcomes (competencies). Communicate these to all faculty and students. Utilize them as the basis for individual course and clerkship objectives and of assessments, with all learning activities and expected outcomes explicitly linked to specific learning objectives. This construct is now the accepted standard for medical

education worldwide and should be a prerequisite for effective curricular change.

- Rebuild the Medical Education Center; expand its capacities to support the significant curriculum development, faculty and other educator development, and promulgation of new teaching strategies that will be required in the course of curricular renewal.

b. Intermediate term (~ within 2-3 year)

- Develop a meaningfully integrated preclinical curriculum. This will require the incorporation of more interactive learning strategies, particularly in the preclinical curriculum, along with integration of clinical content (course material) and context (student experiences with patients).
- Provide students with opportunities for more active involvement in patient care activities.
- Develop resources in clinical simulation, from small task-trainers to whole-body simulators, and/or collaborate with national resources such as the MSR clinical simulation center at Sheba Medical Center. Performance-based skills assessment approaches are notably absent in both the preclinical and clinical curricula.

7. Research

- Observation and findings

HUJI is known worldwide as a leading biomedical research institution. Metrics of research productivity are publications, competitive grants, and prizes. By each of these metrics, HUJI excels. The number of prizes and awards received by the faculty is very impressive, including international awards such as two Wolf prizes in 2008. Overall, this is an excellent record, competitive with the best universities and medical schools in the world and in Israel. In 2013, there were 228 publications by the preclinical faculty in high-quality journals (we were not supplied clinical research publications), and of these 8 were in Nature journals and 31 in Science. This is most respectable for a preclinical faculty of 72. For competitive grant awards, the Faculty of Medicine as a whole submitted 155 applications in 2012-2013, with a 17 percent funding rate. The funding rate has been going down progressively each year since 2008-2009, when the rate was 32 percent. This decline raises some concern. The actual total of awarded funds has not declined, which suggests that there has not been a downturn in available funds and that a few faculty members are doing extremely well. Distinguished grants, such as European

Council for Research (ECR) grants and Senior ECR grants, continue to come in at a respectable rate.

In the self-evaluation report, a major stated objective of the Faculty of Medicine of the Hebrew University is to promote education and research in all the disciplines in the Faculty. To this end there are multiple research institutes and core facilities, and an integrated Faculty Institute for Medical Research Israel-Canada (IMRIC) which includes several Research Hubs in various fields.

There are plans for an Institute for Translational Research that would have overlapping interests with IMRIC but a more clinical focus. This appears to be an example of a lack of coordination or collaboration between the preclinical faculty, in which IMRIC is located, and the clinical faculty.

In the self-evaluation report, several important weaknesses are noted. These weaknesses include:

1. Out-of-date infrastructure at the Faculty (e.g., the animal facility and the mouse transgenic unit, crucial for studying human diseases).
2. Declining number of academic positions in the Faculty. This was a nationwide problem starting approximately a decade ago and has led to increased teaching load and less time dedicated to research and mentoring students.
3. Declining competitiveness in hiring new Faculty. As noted in the report, attracting top researchers is predicated on a rich infrastructure of cutting-edge equipment and resources.

For all these reasons, the current financial crisis presents challenges to the University and Faculty to allocate funds aimed at maintaining the strong research program in the Faculty of Medicine in coming years.

We note that the balance of teaching and research for preclinical faculty, and of teaching, research, and patient care for clinical research faculty, is a major problem. Particularly for the clinical faculty, uncompensated research time has led to extraordinary efforts to carry a full clinical load and perform research on “off” time. In the past, Hadassah offered more research time than other health care providers in Israel, but this was criticized publicly during the financial crisis.

In the Faculty of Medicine, there are signs of a disturbing decline in research over the past five years. On the one hand, the overall rate of publication in the most distinguished journals remains about the same. On the other hand, the decline in grant funding rates and the difficulty in attracting MD/PhD students, suggest that the faculty is stronger in the quality of its long-term very distinguished faculty

members than in pursuing newly developed fields of inquiry and developing younger outstanding faculty.

The MD/PhD program

The Committee shares the Faculty's expressed concern over a declining number of applicants to the MD/PhD program in recent years. This program should be the major source of new translational and clinical investigators.

The MD/PhD program was revised after 2008, when there was a decline in the number of students. The problems identified then included increased length of research studies, changes in students' attitudes and goals, and absence of an organized program and lack of knowledge about it. This led to three implemented reforms:

- Establishment of a structured program
- Dedicated scholarships – implemented as shared support by HUJI and the mentor's laboratory
- Encouraging interested students to start engaging in research activity during the second year of preclinical studies even though time of entry into the MD/PhD program remains at the end of third year

The Committee has proposed several reasons for considering significant change in the content and conduct of the preclinical curriculum (see Study Programs and Teaching and Learning Outcomes sections) and has noted being told that the preclinical faculty has been very resistant to change. Another strategy to gain support for changing the content and conduct of the teaching in the preclinical curriculum might be to encourage student inquiry and general interest in research. Highly successful research-oriented medical schools in the U.S. have reduced lecture hours drastically and changed the nature of their basic science teaching. Their teaching is much more interactive and oriented towards problem-solving activities.

As now constituted, students in the medical school formally apply for entry into the MD/PhD program at the end of the preclinical years. Another possibility for enhancing the program might be through the medical school admissions process. For example, the Faculty might seek out individuals who show an interest in becoming researchers or perhaps even try to look for personality characteristics that might predict a strong interest in research activities. The Committee recognizes that this would not be easy. In fact it would be paving new ground; but it seems worth considering, is potentially fruitful, and certainly is aligned with part of HUJI's mission.

Typical support for HUJI students who have applied for and been accepted into the MD/PhD program is 2 years for the PhD research project. The student is expected to complete the project while he or she re-enters the fourth year of the clinical curriculum and in any case must hand in the PhD thesis by the end of internship.

We met several young researchers who have done very well with this program, getting respected postdoc positions abroad, and gaining positions in the HUJI faculty. We met one person whose contract with a health maintenance fund allowed her to continue her research 1½ days per week. Two of the students were towards the end of their PhD stage. Both were clearly engaged by their research, and committed to try to pursue clinical scientist careers. One potential recruit to the program also took part in the discussions and gave an impressive account of how engagement in the MD/PhD program had been fostered successfully by personal initiative within the context of his Tzameret cohort.

Nonetheless, there are obvious disadvantages to the MD/PhD program, and it has had recruitment problems for many years. Disadvantages that we would note include: 1) By worldwide standards and experience, two years is an extremely short time to generate a PhD, and the projects that can be given the student are necessarily geared to be short-term. Time for serendipity and original lines of inquiry are severely compromised. 2) The transition from the PhD part of an MD/PhD program into the clinical part is an extremely stressful period. The program at HUJI makes it more stressful by requiring that the student write his or her PhD thesis during this same transition period. The student's clinical education and PhD thesis are both at risk during this time. 3) This timetable is not universal in Israel; there are opportunities elsewhere that provide greater time flexibility and accordingly are more likely to be attractive.

The Faculty explained to us that the students do not want to delay their matriculation with a longer PhD program, and that they begin at a later age than students abroad. These arguments were not convincing to the Committee. Students abroad, who typically take 4 years for the PhD part of an MD/PhD program, start at about the same ages. Adequate financial support for the student's life stage would make an extended period of studies more acceptable.

Given the long-term decline in the MD/PhD program and the failure of reforms to stem the decline, we feel that the HUJI program has to become more competitive, innovative, and attractive to potential candidates.

- Recommendations
 - a. Short term/immediate (~ within 1 year)
 - Research at HUJI – Development of the Translational Research Institute and its integration with IMRIC should be given very high priority.
 - Update the infrastructure, e.g., the animal facility and the mouse transgenic unit, as planned in the self-evaluation report.
 - Improve the MD/PhD program, and make it more competitive. Consider developing a syllabus for graduate-level science courses suitable for MD/PhD

students. Consider offering an enhanced opportunity to a smaller number of MD/PhD candidates. This might include a longer period as a PhD student and a significantly enhanced financial stipend for that period.

- Develop a system for separate tracking of the research support and productivity of the clinical faculty.

b. Intermediate term (~ within 2-3 year)

- Increase recruitment of research faculty for preclinical and clinical positions. The financial priorities of the University and Hadassah would need adjustment for this to happen.
- Develop support for clinical faculty to perform research, i.e., develop a program of protected research time for interested and qualified clinician-researchers.
- Ensure that stipends for MD/PhD students allow them to support themselves and their families.

8. Infrastructure

- Observation and findings

The self-evaluation report noted that lecture hall space was at a premium given the number of schools and programs that co-exist on the Ein Kerem campus; the Committee was given the impression that space at Ein Kerem is constrained. We did not specifically evaluate space constraints.

The Committee was told that lecture halls are modern and well-equipped; there are six halls or auditoriums in the Faculty that have a capacity of more than 175 persons. There is a committee that decides on equipment for new classrooms as they are built to help keep up with the state of the art, and there is a service to make sure that all equipment necessary for classes is present. In addition, there are numerous meeting rooms within Hadassah Hospital.

The Committee was quite impressed with the Library which has been undergoing renovation. It is a modern and actively used study center with excellent access to electronic journals and other information sources and a variety of creatively designed rooms and spaces for use by individuals and small groups. We were particularly impressed not only by the structure but also by the fact that the operations of the Library seem very student-oriented. Students receive instruction in use of materials when they enter, more advanced instruction at the beginning of

the third year, and assistance/instruction is available on request. There is both local and remote access to electronic journals. Indeed, the information technology infrastructure includes educational, research, and administrative portals, and is available wherever a person authorized to log into it might be located.

There is a multi-media center led by an individual with enormous experience making videos for teaching purposes who has created a few thousand videos over the years. This service is a valuable asset that has been relatively underutilized given its potential.

For students in research programs, there are some classes on uses of various types of equipment, e.g., electron microscopy, cell-sorting.

The Committee was told that there were some serious issues with the animal facilities (see Research section).

The Committee does not feel that infrastructure problems, except possibly those for animal research, are a major impediment to medical studies at HUJI.

- Recommendations

a. Short term/immediate (~ within 1 year)

- Consider ways to connect clinicians and other educators with the multimedia center so that more people can avail themselves of this rich resource for creating educational material.

b. Intermediate term (~ within 2-3 year)

- See recommendation about the animal facilities in the Research section.

c. Long term (until the next cycle of evaluation)

- It is possible that developing stronger interactive learning (e.g., team-based learning, small groups, etc.) in the medical school or developing an interprofessional learning program for multiple schools might affect the use of space at Ein Kerem and elsewhere. As plans for changes in the study program(s) are being made, make sure to evaluate their interaction with use of available space.

9. Self-Evaluation Process

- Observation and findings

The self-evaluation reporting process took place over the period of a year, beginning in November 2012. The Committee found the report helpful in preparation for its visit and wants to thank Professor Shlomo Sasson for leading the self-evaluation process, Shelley Perlman-Azran for the English editing, and all of the many faculty members who contributed to the report.

There was one item of CHE-requested information missing from the report and its appendices that might have been useful, namely a summary of publications by the clinical (non-basic science) faculty.

The Committee understands that Dean Lichtstein, who took office in October, 2013, has started a strategic planning process for the medical school curriculum. The Committee hopes that this process will help drive change and that in the future self-reflection and evaluation will be linked to assessment of whether the Faculty is meeting its strategic goals and plan. Self-evaluations, while noting strengths and accomplishments, should also be candid about noting problems and failures. The self-evaluation report states that “the study program of the Medical school has achieved its goals.” A more candid appraisal would facilitate internal discussions and development of plans for improvement. Ideally, self-critical review would be an iterative process, done at least every 1-2 years, not only when needed for external review by CHE. Indeed, the self-evaluation report of December 2013, when discussing response to the recommendations of the 2007 CHE review (Chapter 6 of the self-evaluation report) appears not to have updated its response beyond 2010.

- Recommendations

a. Short term/immediate (~ within 1 year)

- Perform an internal group review of the December 2013 self-evaluation report submitted to CHE and the report of this Committee with an eye toward determining how to make self-evaluation an iterative internal process and how to make the next external reporting process more useful not only to CHE but also for internal planning.

b. Intermediate term (~ within 2-3 year)

- Link internal self-evaluation to the strategic planning process.

10. Additional comments by the committee

Medical education is a service to the community and must be oriented to the present and future needs of the community it is meant to serve.

While it is generally acknowledged that Israel's health services are of high quality and relatively efficient, major changes are taking place in the nature of medicine, the nature of Israel's population and the numbers of physicians who serve the community. Medical schools must adjust their curricular goals and teaching programs so that the country will not face catastrophic gaps in health care coverage to the population. Since there is more than a ten year gap between acceptance of a medical student to a faculty of medicine and his/her entering the workforce, changes in medical education must take place immediately to meet the country's needs.

Medical care is moving increasingly out of the hospitals into the ambulatory sector in virtually all specialties. Despite high birth rates in some subpopulations, there is also aging of other segments of the population and increasing rates of chronic illness at all ages. The cadre of older physicians staffing primary care clinics is rapidly heading toward retirement while the number of graduates from Israeli medical schools entering primary care is unacceptably low. Unless addressed at the present time, this combination of factors will seriously endanger the quality of health care in the country and must be addressed by all involved parties (government, sick funds, medical organizations and medical schools).

It is essential that medical students be adequately prepared for the ambulatory sector, both in primary care and in ambulatory specialty care. This must be a goal of every medical school, even those with a research orientation. A greater portion of the clerkships must take place in ambulatory clinics, where most of the patients receive their care. Much more time must be spent in primary care clinics starting early in the course of medical education. Primary care physician teachers must be held in high regard and given academic recognition so that they can be seen as student role models. Research in primary care, primary care organization, quality assessment, and quality improvement must be encouraged. The medical schools must also assume a leadership role in engaging the other parties involved in health care responsibilities to make primary care careers attractive, by acting jointly to create the necessary climate and conditions.

A secondary benefit of the stimulation of primary care and specialty ambulatory care in medical education will be the ability of the schools to address the current shortage of hospital beds for teaching. Hebrew University has an even greater constraint on teaching beds than the other medical schools in Israel.

Hebrew University has a long standing reputation as a leader. In recognition of the increasing national need for new physicians entering primary care and ambulatory care, Hebrew University should use its leadership role to address this issue.

The Committee wants to highlight another issue, one that is related to budget policies and practices within Hebrew University. We heard a variety of conflicting reports from leaders about the ways the Faculty of Medicine generates funds and takes on teaching loads vs. the ways it receives funds for teaching. Although we were told that the budgeting process is transparent, it appears to be complex and opaque. This inhibits important modification of the medical study programs and hence is very much within the purview of the Committee.

To be specific about two confusing things we heard:

1. The Faculty has taken on a major increase in the number of medical students in the Tzameret program and apparently was funded for this important national task. Yet repeatedly we were informed that there was no increase in teaching staff to carry out this undertaking. We could not obtain a satisfactory explanation for the lack of funds directed to the Faculty despite its assuming the educational responsibility for a significantly larger student body.
2. We were unable to get a clear picture of the factors that have hindered making the necessary transitions to modern teaching methods possible. For example, the various committees reviewing the Faculty had recommended that teaching should move from frontal lectures to a substantial amount of small-group teaching. In the self-evaluation report we were told that this recommendation was reversed because of budgetary considerations and fiscal pressure from the University management. In our conversations with University leadership, there appear to be some discrepancies regarding this and other instances of discord between the Faculty and the University.

Effective medical school learning generally requires teaching small groups of students to facilitate active learning in order to attain a high level of competence in both knowledge and skills. Physicians have a key role in improving the health status and maintaining the lives of their patients. Physicians must not only launch their careers with very high levels of competence but also because of the rapid outdateding of old knowledge and generation of new knowledge, physicians must have acquired highly developed lifelong learning skills.

Hebrew University needs to seriously consider how it is going to support teaching methods that are being recognized as essential elsewhere to produce this output, particularly if it wants its educational quality to compare with those of other highly reputed schools around the world.

Chapter 4: Collected Recommendations:

Recommendations from sections 1-9 of Chapter 3B are aggregated here and are characterized as short term [~ within 1 year], intermediate term [~ within 2-3 years], or long term [until the next cycle of evaluation]. Content from section 10 has led to two specific recommendations.

Section 1 - Mission:

1. Refine the mission of the Medical School and communicate it to the entire community, including faculty and students. As the curriculum is being re-evaluated and resource allocation decisions are being considered, have explicit discussions about the aspects of the mission that will be affected by the changes. (short term)
2. The University should empower those who have direct leadership responsibilities for medical education to make decisions about curricular changes and resource allocation to support them. (short term)
3. Identify and remove the barriers and disincentives to innovation in medical education that arise from policies of the University and its affiliates, e.g., appointment and promotions policies (see Section 4, Human Resources/Faculty). (short term)

Section 2 - Organizational Structure:

1. Forward the final report of the ad hoc Advisory Committee on Review of the Curriculum to CHE before December 31, 2014. (short term)
2. Negotiate with hospitals and sick funds for additional teaching facilities in order to accommodate the requirements of the study program. (short term)
3. Develop clear lines of authority and purpose for each curriculum subcommittee and one central committee overseeing the subcommittees. (short term)
4. Ensure that the School of Medicine has an efficient process in place for the continuing development and structuring of the entire curriculum with effective and efficient interaction between preclinical and clinical components. For example, consider having one central committee that oversees a set of subcommittees, each of which has a clear line of authority and purpose. (intermediate term)

5. Ensure that recommendations for change in the curriculum are implemented promptly. (intermediate term)

6. Reevaluate the system for election of dean, to eliminate the absolute requirement that deans rotate between clinicians and basic scientists. Such a change would give more flexibility and opportunity for selection of the best candidate regardless of his/her faculty category.

Section 3 – Study Programs:

1. Do not wait for another internal or external review before implementing some of the desired changes to the curriculum outlined in the self-evaluation report. Below are some of the changes that should be included and operationalized with a view to implementation in academic year 2015-2016, i.e., all are short term:

- a. Expand professionalism education across the curriculum, including the development of the Man and Medicine course in the clinical years and including an increased focus on social justice.
- b. Adopt sound pedagogic teaching techniques by all teachers and in all courses. This should include small-group problem solving, assessment that relies on integration of knowledge rather than memorization, and increased use of technology including multimedia and online learning.
- c. Further integrate clinical medicine into the basic sciences and vice-versa. Support and expand existing efforts by innovative HUJI basic science and clinical educators and spread them throughout the entire curriculum. Identify and overcome barriers to implementation including an end to the system of agreeing to necessary changes in subcommittees but failing to act on such changes as they pass up the hierarchy.
- d. Further increase teaching in the ambulatory setting.
- e. Develop a robust program to teach patient safety and quality throughout the curriculum. Consider consultation with MSR, a national resource that has a major interest in fostering greater patient safety and quality of care.
- f. Give the faculty of medicine significant authority over the content and delivery of all of the courses, including those given at Givat Ram.

g. Have the faculty at Givat Ram travel to Ein Kerem to teach rather than requiring the entire student body to travel twice weekly to Givat Ram.

h. Give students' academic credit for electives at appropriate, accredited foreign medical schools.

2. Rethink the basic science knowledge and skills needed for all graduating physicians. Critical thinking skills, including evaluation of scientific evidence, must be emphasized. In the course of this re-thinking, the special needs of the future physician-researcher should not be neglected. (intermediate term)

3. Shorten, reconfigure, and even eliminate some preclinical courses so that the curriculum is more relevant for all medical students. (intermediate term)

4. Reconsider the possibility of moving the teaching of basic sciences fully or partially to a systems approach. This method is being used increasingly with great success among leading schools in the Western world, and is educationally sound. (intermediate term)

5. Consider separate tracks for basic science courses depending on the academic background of the student and on whether the student plans to enroll in a PhD program. (intermediate term)

Section 4 - Human Resources/Faculty:

1. Develop the Center for Medical Education (short term)

Recruit a director for the Center with expertise in medical education

Staff the Center to meet the needs of the new curriculum

Ensure that there is a program of faculty development activities for all faculty

Ensure that faculty whose performance merits remediation receive appropriate services

2. Revise the criteria for academic appointments, with greater emphasis on teaching innovation, clinical skills and leadership (short term)

3. In areas where teaching is currently done by persons who do not have expertise in the specific subject, find alternative teaching resources such as clinical faculty who do have such expertise. (intermediate term)

4. In promotion of research faculty, teaching competence must be a factor. Poor teachers should not be promoted, regardless of scientific productivity. (intermediate term only because this first requires development and implementation of robust assessment of teaching competence)

5. Develop ways to reward clinical teachers including those in the ambulatory and primary care sectors.

Section 5 – Students:

1. Improve proactive communication between the University and the medical students, especially at times of change. The dean should have regular meetings with the student body, not just the student representatives. (short term)

2. Organize a process to provide career advice for medical students. (short term)

3. Make the students full voting members of the appropriate committees relating to education. (short term)

4. Using HUJI faculty for interviews in the admissions process may not be an efficient use of faculty time and should be formally reconsidered. (short term)

5. Provide ample opportunities for students to take positions as physician assistants. Design those positions to be not just work but also educational opportunities. (intermediate term)

6. Consider increasing support for and access to positive lifestyle activities such as exercise facilities. (intermediate term)

Section 6 – Teaching and Learning Outcomes:

1. Establish school-wide learning outcomes or competencies. (short term)
This construct is now the accepted standard for medical education worldwide and should be a prerequisite for effective curricular change.

Communicate these to all faculty and students.

Utilize them as the basis for individual course and clerkship objectives and of assessments, with all learning activities and expected outcomes explicitly linked to specific learning objectives.

2. Rebuild the staffing of the Medical Education Center; expand its capacities to support the significant curriculum development, faculty and other educator development, and promulgation of new teaching strategies that will be required in the course of curricular renewal.

3. Develop a meaningfully integrated preclinical curriculum. (intermediate term) This will require the incorporation of more interactive learning strategies, particularly in the preclinical curriculum, along with integration of clinical content (course material) and context (student experiences with patients).

4. Provide students with opportunities for more active involvement in patient care activities. (intermediate term)

5. Develop resources in clinical simulation to address current deficiencies in skills training and performance-based skills assessment that are present in both the preclinical and clinical curricula. (intermediate term). This will require either acquisition and deployment of a variety of technologies from small task-trainers to whole-body simulators, and facilities for interactions with standardized patients; or collaboration with national resources such as the MSR clinical simulation center at Sheba Medical Center; or both.

Section 7 – Research:

1. Research at HUJI – Development of the Translational Research Institute and its integration with IMRIC should be given very high priority. (short term)

2. Update the research infrastructure, e.g., the animal facility and mouse transgenic unit, as outlined in the self-evaluation report. (short term)

3. Improve the MD/PhD program, and make it more competitive. Consider developing a syllabus for graduate-level science courses suitable for MD/PhD students. Consider offering an enhanced opportunity to a smaller number of MD/PhD candidates. This might include a longer period as a PhD student and a significantly enhanced financial stipend for that period.

4. Develop a system for separate tracking of the research support and productivity of the clinical faculty. (short term)

5. Increase recruitment of research faculty for preclinical and clinical positions. (intermediate term)

The financial priorities of the University and Hadassah would need adjustment for this to happen.

6. Develop support for clinical faculty to perform research, i.e., develop a program of protected research time for interested and qualified clinician-researchers. (intermediate term)

Section 8 – Infrastructure:

1. Consider ways to connect clinicians and other educators with the multimedia center so that more people can avail themselves of this rich resource for creating educational material. (short term)
2. See recommendation about the animal facilities in Section 7 – Research. (intermediate term)
3. It is possible that developing stronger interactive learning (e.g., team-based learning, small groups, etc.) in the medical school or developing an interprofessional learning program for multiple schools might affect the use of space at Ein Kerem and elsewhere. As plans for changes in the study program(s) are being made, make sure to evaluate their interaction with use of available space. (long term)

Section 9 - Self-evaluation:

1. Perform an internal group review of the December 2013 self-evaluation report submitted to CHE and the report of this Committee with an eye toward determining how to make self-evaluation an iterative internal process and how to make the next external reporting process more useful not only to CHE but also for internal planning. (short term)
2. Link internal self-evaluation to the strategic planning process. (intermediate term)

Section 10 – Additional comments by the Committee:

1. Increase not only ambulatory medical education (see Section 3, Study Programs), but particularly primary care education, beginning early in the course of medical education.
2. The budget should be transparent to administration and faculty and needs to be able to support the increased size of the student body and modern methods of teaching.

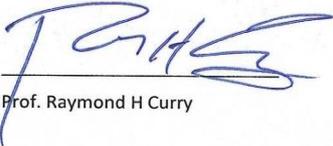
Signed by:



Prof. Stephen Schoenbaum – Chair



Prof. Peter Crome



Prof. Raymond H Curry



Prof. Elliot Gershon



Prof. Shimon Glick



Prof. David Katz



Prof. Jo Shapiro

Appendix 1: Letter of Appointment

February 2014

Prof. Stephen Schoenbaum
The Josiah Macy Jr. Foundation,
USA

Dear Professor Schoenbaum,

The Israeli Council for Higher Education (CHE) strives to ensure the continuing excellence and quality of Israeli higher education through a systematic evaluation process. By engaging upon this mission, the CHE seeks: to enhance and ensure the quality of academic studies, to provide the public with information regarding the quality of study programs in institutions of higher education throughout Israel, and to ensure the continued integration of the Israeli system of higher education in the international academic arena.

As part of this important endeavor we reach out to world renowned academicians to help us meet the challenges that confront the Israeli higher education by accepting our invitation to participate in our international evaluation committees. This process establishes a structure for an ongoing consultative process around the globe on common academic dilemmas and prospects.

I therefore deeply appreciate your willingness to join us in this crucial enterprise.

It is with great pleasure that I hereby appoint you to serve as the Chair of the Council for Higher Education's Committee for the Evaluation of the study programs in **Medical Studies**. In addition to yourself, the composition of the Committee will be as follows: Prof. Peter Crome, Prof. Raymond Curry, Prof. Shimon Glick, Prof. Jo Shapiro, Prof. Eliot Gershon, Prof. David Katz and Prof. Ora Paltiel-Clarfield.

Ms. Daniella Sandler will be the coordinator of the committee.

Details regarding the operation of the committee and its mandate are provided in the enclosed appendix.

I wish you much success in your role as the Chair of this most important committee.

Sincerely,

Prof. Hagit Messer-Yaron
Deputy Chairperson,
The Council for Higher Education (CHE)

Enclosures: Appendix to the Appointment Letter of Evaluation Committees

cc: Ms. Michal Neumann, Deputy Director-General for QA, CHE
Ms. Daniella Sandler, Committee Coordinator

Appendix 2: Site Visit Schedule

Site visit to Hebrew University-Hadassah Medical School

Committee for the Evaluation of Medical Schools

Day 1: Sunday, May 25, 2014, Faculty of Medicine

The meetings will take place at the Faculty of Medicine in the meeting room next to the Dean's office (First Floor, Faculty Administration Building).

Details on functions and positions of the invited faculty members are given below the following schedule.

Time	Subject	Participants
10:00-11:00	Opening session Heads of the institution	Prof. Menahem Ben Sasson- President Prof. Asher Cohen – Rector Prof. Barak Medina- Head of the Office of Academic Assessment & Evaluation Mount Scopus, Minhala Building, Second Floor (room 506), University Campus
11:00-11:45	Travel time	
11:45-12:15	The Dean of the Faculty of Medicine	Dean Prof. David Lichtstein
12:15-13:00	School's academic and administrative leadership	Dean Prof. David Lichtstein, Prof. Shosh Altuvia, Prof. Colib Block, Prof. Haya Galsky, Prof. David Gertz, Dr. Ronit Harel, Prof. Yoel Yaari, Prof. Dror Mevorach, Prof. Yaakov Naparstek, Prof. Shlomo Sasson
13:00-14:00	Senior academic staff	Prof Uriel Elhalal, Prof. Arie Ben-Yehuda, Prof. Simon Benita, Prof. Uzi Beler (Shaare Tzedek Hospital), Prof. Prof. Etie Granot (Kaplan Hospital), Prof. Joel Yisraeli, Prof. Avi Fainsod, Prof. Dorit Shaham
14:00-15:00	Lunch	Closed door – committee only

15:00-16:00	Committees involved in pre-clinical education	Prof. Colin Block and Committee members
16:00-17:00	Committees involved in clinical education	Prof. Dror Mevorach and Committee members
17:00-17:30	Admission of Students	Dr. Eran Yisraeli, Prof. Ehud Rudis, Dr. Ora Attia, Ms. Dafna Rehovi,
17:30-18:15	Junior academic staff and Teaching assistants	Dr. Micha Berger, Dr. Alex Binstock, Dr. Galia Blum, Dr. Ehud Cohen Teaching assistants (PhD students): Mr. Yotam Bar-On, Ms. Esther Zinger, Mr. Omar Ibrahim, Mr. Shiloh Assaf
18:15-19:15	Closed meeting	Committee members

Day 2: Monday, 26 May, 2014; Research and Students

- **The meetings will take place at the Faculty of Medicine in the meeting room next to the Dean's office (First Floor, Faculty Administration Building).**

Time	Subject	Participants
09:00-10:00	Services for supporting teaching	Dr. Ronit Harel, Prof. Aharon Lev-Tov, Dr. Michael Beigel, Dr. Boaz Giloh, Dr. Nadav Ziv, Dr. Michal Moyal, Dr. Diego Kremer, Ms. Vardit Erez, Ms. Sharon Lenga
10:00-11:15	Research	Prof. Shlomo Sasson., Dr. Ehud Cohen, Prof. Yuval Dor, Prof. Eithan Galun, Prof. Haya Galsky. Dr. Boaz Giloh, Yaakov Naparstek, Prof. Yoel Yaari,
11:15-12:15	Tour of the School with the Dean of the Faculty – Classes, labs, learning and research facilities	Organized by Dr. Ronit Harel and Mr. Yaniv Sassi
12:15-13:15	Lunch	

13:15-14:15	Students – pre-clinical students (first to third year)	
14:15-15:00	Students – clinical (fourth to sixth year)	
15:00-15:10	Break	Committee members
15:10-16:00	MD\PhD students	
16:00-16:30	Alumni	
16:30-17:00	Closed meeting	Committee members

Day3: Tuesday, 27 May 2014; Clinical teaching- visit to chosen clinics and hospitals

The meetings will take place at the Faculty of Medicine in the meeting room next to the Dean's office (First Floor, Faculty Administration Building).

Time	Subject	Participants
09:00-10:15	Clinical Teaching	Prof. Dror Mevorach and other clinical teachers (to be named)
10:15-12:30	Tour of Clinical facilities	Organized by Prof. Dror Mevorach
12:30-13:30	Summation Meeting- appointed to deal with quality assessment	Dean David Lichtstein, Prof. Colin Block, Prof. Dror Mevorach, Prof. Arie Ben-Yehuda, Prof. Haya Galski, Prof. Yaakov Naparstek, Dr. Ronit Harel,
13:15-14:30	Lunch	
14:30-15:00	Closed meeting	Committee members
15:00-15:45	Summation Meeting- Dean	Dean David Lichtstein
15:45-16:30	Travel time	
16:30-17:15	Summation Meeting- Leadership	Prof. Menahem Ben Sasson- President Prof. Asher Cohen – Rector Prof. Barak Medina- Head of the Office of Academic Assessment & Evaluation