EVALUATION OF PHARMACY SCHOOL AT THE HEBREW UNIVERSITY

COMMITTEE FOR THE EVALUATION OF PHARMACY SCHOOLS IN ISRAEL

December 2021

Section 1: Background and Procedures

.1 In the academic year 2021-2022 the Council for Higher Education [CHE] put in place arrangements for the evaluation of study programs in the field of Pharmacy in Israel.

.2 The Higher Education Institutions [HEIs] participating in the evaluation process were:

- Ben-Gurion University
- Hebrew University

.3 To undertake the evaluation, the Vice Chair of the CHE appointed a Committee consisting of[1]:

- Prof. Cate Whittlesea, Professor of Pharmacy Practice, Head of the Research Department of Practice and Policy and Associate Director of Clinical Education UCL School of Pharmacy University College London, United Kingdom. *Committee chair*.
- Prof. Linda Awdishu, Chair of the Division of Clinical Pharmacy, University of California, San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences, USA.
- Prof. Daniel Kurnik, Director of Clinical Pharmacology at Rambam Health Care Campus and Clinical faculty member in the Medical School at the Technion, Israel.

Ms. Pe'er Baris-Barnea served as the Coordinator of the Committee on behalf of the CHE.

.4 The evaluation process was conducted in accordance with the CHE's Guidelines for Self-Evaluation (February 2019). Within this framework the evaluation committee was required to:

- Examine the self-evaluation reports submitted by the institutions that provide study programs in Pharmacy.
- Conduct virtual site visits at 2 institutions participating in the evaluation process.
- Submit to the CHE an individual report on each of the academic units and study programs participating in the evaluation.
- Set out the committee's findings and recommendations for each study program.
- Submit to the CHE a general report regarding the evaluated field of study within the Israeli system of higher education.

.5 The evaluation committee examined only the evidence provided by each participating institution — considering this alongside the distinctive mission set out by each institution in terms of its own aims and objectives. This material was

[1] The committee's letter of appointment is attached as **Appendix 1**.

further elaborated and explained in discussions with senior management, faculty members, students and alumni during the course of each one-day visit to each of the institutions.

.6 This report deals with the Pharmacy School at Hebrew University. The Committee's visit to Hebrew University took place on 1-2.12.21. The schedule of the visit is attached as Appendix 2.

Section 2: Executive Summary

We, the external committee members, take our roles and responsibilities seriously and have made recommendations aimed at improving the faculty and student experience during the educational process. Consequently, all suggestions are made in good faith and are endorsed by the committee as a whole. We appreciate the opportunity to provide this feedback. We have divided our recommendations as 'essential', 'important' and 'desired'. We wholeheartedly support the essential changes recommended within the executive summary as outlined each below. The body of the document contains further explanation for our recommendations.

We have acknowledged with a commendation the international reputation of the Institute for Drug Research, HUJI, for sustained excellence in research.

There is an essential need for a new reporting structure within the Health Sciences to allow a Pharmacy Dean to report to a senior leader responsible for the oversight of all health professional schools. Other essential recommendations are linked to the management and the School of Pharmacy, administration, support for the undergraduate and postgraduate programs including the B.Sc Pharm internship and the PharmD clinical placements. The committee recommends as an essential requirement a needs assessment to be undertaken to determine the number of clinical pharmacy faculty needed for clinical and experiential learning in the B.Sc Pharm and PharmD programs. This is because we consider it necessary to dramatically increase the number of clinical faculty. The School of Pharmacy should also develop a plan outlining how it will respond to the sharp increase in B.Sc Pharm student enrolment.

A holistic review of the B.Sc Pharm curriculum involving stakeholders, i.e., Ministry of Health, pharmacy organizations and societies together with patients and students is needed. This is essential to streamline the existing curriculum with the aim of introducing more clinically orientated courses and ensure pharmaceutical science subjects are integrated to the role of the pharmacist. Including introductory pharmacy practice experience to expose students in years 1 and 2 to the profession of pharmacy is also required. Information should be included on the current and

future roles of pharmacists and additional support and information for students linked to the internship is also needed.

A curriculum summit[2] to review the PharmD against international standards to develop competencies / core entrustable professional activities is required. This should include senior academic faculty, adjunct clinical faculty, clinical instructors and ideally stakeholders, e.g., Ministry of Health, Pharmacy organization, etc.

Enhanced mechanisms to obtain students feedback and to routinely assess teaching quality are also required. Assurance processes should be introduced to assess the quality of B.Sc Pharm internships and PharmD clinical placements. These placements should also have identified learning outcomes and a learning plan which are clearly defined for students and placements/internship supervisors. We recommend that this also includes robust assessment of students' performance against these objectives. A review of student workload in the B.Sc Pharm and PharmD programs should also be undertaken.

A review of the scope, content, and level of the general courses to support both MSc and PhD students is also essential.

Important recommendations were to encourage the faculty to utilize a wider range of teaching and evaluation methodologies that will enhance student learning, and to redesign the pharmacology problem-based learning (PBL) to allow intermixing of pharmacy students with those from other health professions, e.g., medicine and nursing.

The Committee also identified it desirable for the School of Pharmacy to continue to appoint faculty which reflects the diversity of the students. In addition, if lack of lab space limits the professional development of the junior faculty it would be desirable to consider designing and implementing a policy to gradually and respectfully transfer lab space from emeriti to active faculty members. It would also be desirable for the School of Pharmacy to develop an alumni network to support wider involvement of alumni with the school and to promote dissemination of continuing professional development courses and networking.

Section 3: Observations

3.1 Introduction

The Hebrew University in Jerusalem (HUJI) describes itself as 'a pluralistic institution where science and knowledge are developed for the benefit of humankind', whilst 'the study of Jewish culture and heritage are a foremost legacy

[2] A dedicated curriculum review event which includes faculty and stakeholder representation

of the Hebrew University'. The stated goal of HUJI is 'to be a vibrant academic community, committed to a rigorous scientific approach and characterized by its intellectual effervescence. These will both radiate and enlighten the University's surrounding society'. HUJI's mission is 'to develop cutting edge research and to educate future generations of leading scientists and scholars in all fields of learning'.

The School of Pharmacy is part of the Faculty of Medicine whose mission 'is to preserve its cutting edge in biomedicine through education, research, and community service, while maintaining scientific excellence at the highest international standards'. This endeavor is supported by the School of Pharmacy and its associated research institute, the Institute for Drug Research (IDR), with a focus on translational research in basic sciences and clinical medicine; thus, supporting the Israeli health care system and global medical and clinical research. The School of Pharmacy's mission is also to teach and train professional pharmacists required to work in 'community, hospital pharmacies, health institutions, and industry'. Among other programs, the School teaches the B.Sc Pharm. which leads to registration as a pharmacist in Israel.

During our review of the self-evaluation report and our meetings and discussions at the event, we felt that the majority of these values were supported by the faculty, students and alumni, specifically in the areas of pharmaceutical science research. Supporting students to gain the knowledge and skills to be future leaders in both research, industry via MSc/PhD, and clinical pharmacy through the PharmD programmes was also noted.

3.2 Management and Administration

According to the self-evaluation report, the School of Pharmacy is a health professions school within the Faculty of Medicine. The School of Pharmacy has 4 education programmes: B.Sc Pharm and PharmD programmes which are oriented towards training pharmacists for clinical positions, and the MSc and PhD programmes in pharmaceutical sciences. The self-evaluation was performed for all programmes. There is a large body of students across the programs. In the academic year of 2018/2019, there were 340 B.Sc Pharm, 52 MSc., 81 PhD., and 51 PharmD students. Of note, information was not provided for 2020/2021 academic year.

The Head of School of Pharmacy is elected by the faculty for a 4-year term. The Head of the Pharmacy School has a team of Directors for each of the disciplines and also administrative staff. The resources, facilities, funding, structure, and support is dictated by the Faculty of Medicine leadership. Faculty recruitments are made with approval of the Dean of the Faculty of Medicine. The organizational structure

is quite different from many other international schools where the Head of the School of Pharmacy leads Department Chairs and also an administrative unit with Offices of Admissions, Student Affairs, Education, and Research. In addition, the reporting structure of the School of Pharmacy to the Dean of Medicine Faculty creates inequity in resource allocation and budgeting. The committee found this to be an unusual situation and views this as a structural weakness since the School of Pharmacy does neither have sufficient administrative support for the operations of the school nor the autonomy to recruit independently of the Faculty of Medicine.

Recommendation (Essential): Establish a new reporting structure within Health Sciences whereby all health professional schools are led by their respective Dean who reports to a senior leader responsible for the oversight of all health professional schools. It is critical that this senior leader is not the Dean of a health profession school (i.e. Medicine) to remove any bias or conflict of interest in resource allocation to the various health professions schools. Similarly, the School of Pharmacy would profit from achieving more independence from the Institute of Drug Research, to allow a greater autonomy and focus on transforming the undergraduate training according to the pharmacists' expanding clinical roles. Establish administrative offices within the School of Pharmacy responsible for the oversight of admissions, student affairs/academic oversight, education (undergraduate and experiential) and research. This would allow the School of Pharmacy to have greater autonomy and potential for independent growth and development.

The School of Pharmacy has part-time clinical instructors at Hadassah Hospital and affiliate sites. The interviews and report suggest the School of Pharmacy has minimal oversight in the internship program. Pharmacy is a professional degree, one with regulations and requirements that are specific to the B.Sc Pharm degree and that require intimate knowledge of the profession in the patient-facing clinical field to direct the curriculum.

Recommendation (Essential): Establish procedures to ensure that the internship program is robustly quality assured by the School of Pharmacy and meets the learning objective stated in the B.Sc Pharm degree

In this area of evaluation, the Committee determined that the Hebrew University is below the acceptable threshold level of performance.

3.3 QA & Self-Evaluation Process

It is the consensus of the review team that the report contained a lot of information making it challenging to navigate and understand. The committee requests that future reports be more concise, with clear programme descriptions that allow

reviewers to better understand the student pathway and progression through each programme and between programmes, where appropriate (e.g., B.Sc Pharm to MSc and PhD (Excellence pathway) and B.Sc Pharm to PharmD pathway). Figures depicting the component courses by year for each program were presented. While helpful, these figures (p16-17) were difficult to read and would be more informative if additional information such as credit value could be added. In the appendices, all courses were provided as a list of files. Arranging these into degree programmes would have made this material more accessible. Table 3 was challenging to understand and would have been better provided as a table summarizing each separate programme and linked to the relevant figure.

Clearer explanation of the function of the School Committees and their relationships would have been helpful. For example, a clear definition of the role of the Teaching Committee and how this is linked to the role of the infrastructure committee (table 16 p 105) and identified in discussion with members of the Teaching committee would have been welcomed.

We understand from the self-evaluation report that data for this was collected and collated by School of Pharmacy staff with input from other offices (Rector and Dean) to prepare this report. The report should be reviewed and proofread for flow, presentation, and completeness considering the review will be undertaken by a panel who will not be familiar with the HUJI School of Pharmacy organization structures and processes, and also the associated degree programmes. Some material was challenging to interpret, e.g., Histogram: distribution of the final grades over the last three years (in all degree levels) (p 48). Some tables were presented without being referred to in the text, e.g., table 16 (p 89 onward) and thus it was challenging for the reviewers to assess importance of the information presented. The report must demonstrate that self-reflection and analysis were used to identify what is needed to improve the programmes. Strengths and weaknesses were identified, but this could have been enhanced with further analysis and development of an action plan.

Recommendation (Essential): For the next CHE review, an organized and self-reflective self-evaluation report and appendices will be required. This report and appendices should be reviewed and proofread for flow, presentation, and completeness. The report should be written with careful consideration that a panel unfamiliar with the HUJI will be undertaking this evaluation. It is highly recommended that all faculty read the report and provide feedback prior to its submission. The report must demonstrate self-reflection and analysis were used to identify what is needed to improve the programmes.

One major concern with the self-evaluation report is the lack of any description of the ongoing institutional or departmental processes involved in quality assurance of the clinical placements in the B.Sc Pharm or PharmD programmes, including the 6-month internship undertaken before registration as a pharmacist. However, it was explained that the student reports were reviewed, and that the School supported students in finding an internship position. Discussions during the meetings with students suggested that information about internships and support finding an internship position should be improved. Although the self-evaluation report explains 'The committee evaluates the student's performance during the internship and confirms the completion of his studies' (p 42) the criteria against which this is assessed and those which would result in a student failing to be signed off for the internship were not clear. It was identified that the School of Pharmacy does check that pharmacists supervising the B.Sc Pharm internship have a minimum number of years of experience, but this appear to be the sole criteria assessed. Clinical pharmacists (with a PharmD) supervise PharmD students during their clinical rotations.

Recommendation (Essential): A quality assurance procedure must be implemented to assess the stability and quality of placements sites for the B.Sc Pharm internships and the PharmD clinical placements. This quality assurance should be ongoing before, during, and after these students are engaged in their placements. It should include both the site facilities and the suitability of the pharmacist or other health care professional (as appropriate) to supervise the students' learning in the placement/internship. This should extend beyond the number of years in practice to include assessment of their teaching/mentoring and clinical/professional practice experience. We recognize that this will require an increased administrative workload and recommend additional dedicated administrative support essential for this QA process.

The self-evaluation report did present a lot of information, but there was limited self-reflection and analysis of the programmes. There was limited reference to stakeholder engagement (e.g., students, healthcare and industry representatives) in the evaluation and development of the programmes. Self-evaluation reports are designed to critically examine a department's structure and substance, judge its overall effectiveness relative to its goals and learning domains, identify specific strengths and deficiencies, and indicate a plan for necessary modifications and improvements. The process should include an assessment of the appropriateness of each of the programmes' goals to the demonstrated needs and expectations of the stakeholders, and the programmes' effectiveness in meeting set thresholds for established outcomes. It would have been helpful to learn the strengths and weaknesses for each programme and plans for update/enhancement. It would have been good to understand how the B.Sc Pharm was reviewed and updated to

meet the Israeli health care needs for pharmacists, as completion of this programme leads to registration as a pharmacist. There was a focus on the need of the PharmD degree to be mandated by the Ministry of Health as the requirement for practicing as a Clinical Pharmacist in Israel. This was clearly identified during the Q&A meetings.

Recommendation (Essential): The view of stakeholders, i.e. professional pharmacy organizations and societies, the Ministry of Health, and the patients/the public, should be routinely sought and used to guide change in the pharmacy curriculum. This is essential to ensure up to date curricula which meet the clinical and pharmaceutical science needs for the future roles of pharmacist in Israel as the medication expert focused on medication design, development, and regulations, but also on the safe and effective use of medications by patients and healthcare professionals.

The self-evaluation and meetings with faculty described a mechanism for continual review by each of the 4 divisions, i.e. Pharmaceutical Chemistry, Pharmacology, Pharmaceutical Science, and Clinical Pharmacy. It was reported that updating of pharmacology would also be triggered by changes in the medical, dental, or nursing curriculum, as the Pharmacology department taught this subject to all health professional students. Discussion in the meeting with staff suggested a review was undertaken of the MSc programmes to ensure they met the needs of students entering research in academic and industry. Input from clinical pharmacists was also identified during the meetings which ensured that clinical content of the PharmD was updated. A change to the curriculum would also be triggered by a new academic appointment in the School of Pharmacy as their teaching area needed to be included. It was unclear how a review of the relevance of such new material for example to the B.Sc Pharm degree was undertaken. A formal structure is needed to assure that educational needs are met and that the curriculum, particularly the B.Sc Pharm, remains comprehensive and meets the needs for practicing pharmacists in Israel including those with patient-facing roles in community and hospital.

Recommendation (Essential): Building on the individual review of course content for degrees taught by the departments, the School of Pharmacy needs to develop a robust mechanism to allow each degree to be reviewed annually in a holistic and collaborative way to ensure new material relevant to the learning outcome of the programme are included/updated, and that redundant or outdated material is removed.

It was noted that the Department's Teaching Committee reviews course evaluations, and that this may trigger curricular or instructor changes and an update to the degree programmes. However, given the low number of completed

student evaluations, this should not be the sole mechanism for curricular evaluation.

Recommendation (Essential): The views of students on their learning is important, and the School of Pharmacy needs to identify enhanced mechanisms to support greater completion of student evaluations, so that these results can be used to support review of the degree programmes. Additionally, curriculum evaluation through ongoing routine peer faculty review will enhance the effectiveness of the curricular updates.

Linking the outcome of the B.Sc Pharm to registration of these students as pharmacists in Israel was challenging for both the review panel and the School of Pharmacy, because the registration exam is no longer required for student pharmacist graduates of Israeli schools of pharmacy. In addition, the degree outcomes could not be mapped by the review panel to learning outcomes and competencies required at registration, as these do not exist. The development of defined outcomes / competencies required for the initial registration as a pharmacist in Israel is important as they ensure the competency of the workforce in delivery of patient care and medicine-related outcomes. They also support curriculum review by the School of Pharmacy to ensure the B.Sc Pharm degree meets the needs of patients and other stakeholders, e.g., healthcare teams and organization and the pharmaceutical industry. Moreover, no learning outcomes for the B.Sc Pharm internship could be identified.

Recommendation (Essential): Learning outcomes together with a learning plan including essential core activities should be developed for the B.Sc Pharm internship. This will support both students and internship supervisor to ensure the learning outcomes are achieved and essential core activities are completed.

The B.Sc Pharm degree programme does not emphasize skills and knowledge required for patient-focused pharmacy practice, and the committee could not identify clearly defined student learning outcomes and assessments linked to this crucial skill. By definition, student learning outcomes are also linked to the comprehensive performance of students in all aspects of pharmaceutical science and healthcare. Assessment appears to be focused primarily on foundational knowledge using multiple choice question-based exams and quizzes. Practical reports were assessed in pharmaceutical sciences. However, robust assessment of clinical knowledge and skills in workshops, presentations, and in the workplace has not been developed to ensure standardization of these assessment. Training of staff to undertake such assessment in a robust and standardized way was also not present. For example, experiential (work-based) assessment tools were not used in the B.Sc Pharm internship or the PharmD, and objective structured clinical

examinations/experiences (OSCEs) were not used to assess application of knowledge and skills, understanding, and behaviours/attitudes.

Recommendation (Essential): The School of Pharmacy needs to review its assessment of clinical / professional skills to ensure standardized and robust methods are used to assess students' performance against learning objectives. This should include work-based assessment skills in the B.Sc Pharm internship and the PharmD placements.

There appears to be no formal assessment process for routinely evaluating teaching by staff, e.g. peer review. It was noted student feedback is gathered throughout the year and that students are part of the Teaching Committee's reviews. However, faculty staff only undertake teaching evaluation during probation or as part of the promotion process. It was not clear if this process includes lecturers, adjunct lecturers, and clinical instructors. In addition, support appears to be triggered by reported poor performance in teaching rather than an ongoing development activity. Support for staff to transfer to online teaching and assessment developed by the university was reported.

Recommendation (Essential): The School of Pharmacy needs to develop a robust peer review mechanism for ongoing formal assessment of teaching quality by all staff who teach students on the B.Sc Pharm, MSc and PharmD programmes. Opportunities to gain new teaching knowledge and skills should be provided to all who teach to develop and enhance their teaching practice and not solely to address identified poor performance.

In this area of evaluation, the Committee determined that the Hebrew University clearly fails to meet the acceptable threshold level of performance.

3.4 Study program

The School of Pharmacy has 4 main programs: B.Sc Pharm and PharmD programs which are oriented towards training pharmacists with a clinical orientation, and the MSc. and PhD. Programs in Pharmaceutical Sciences.

The Bachelor of Science in Pharmacy is a 3.5-year program followed by a 6-month internship in community pharmacies, hospitals, HMOs, or industry. It was reported to the committee that historically 98% of the graduates passed the licensing exam, resulting in removal of the licensure examination requirement for Israeli pharmacy graduates. Additionally, after graduation, 90% graduates obtain positions working in community or hospital pharmacy, pharmaceutical industry, regulation, and marketing.

The B.Sc Pharm degree requires 180 credit hours, and the curriculum is heavily focused on basic sciences. Faculty discussions demonstrated efforts towards updating their respective courses. Student feedback, however, highlighted a disconnection between the B.Sc Pharm course and practice of pharmacy. The students felt some of the foundational courses were not relevant to pharmacy practice (e.g. mathematics, physics, engineering, and electricity), and they wanted to deepen their clinical knowledge, even if the students were on a research track. On review of the courses, it is acknowledged that mathematics and physics are requirements for other schools of pharmacy. It appears there is a marked emphasis on chemistry courses covering analytical chemistry, organic chemistry, bioorganic chemistry, spectral analysis, physical chemistry, medicinal chemistry, and biochemistry. There appears to be an opportunity to streamline the chemistry courses within the B.Sc Pharm degree. The students felt the Pharmacotherapy courses were beneficial but felt the structure of Pharmacotherapy B (i.e. disease-based) was more conducive to learning than the structure of Pharmacotherapy A (i.e. random drug-based). Additionally, the students wanted more course options within the School of Pharmacy in place of other health professional schools.

Recommendation (Essential): Conduct a curriculum summit[3] including senior academic faculty, clinical instructors, representatives from internships to examine and streamline the existing curriculum with the goal of introducing more clinically oriented content. Consider integrated science curriculum models for redesigning the delivery of foundational science courses. Consider conducting a peer review of the foundational courses such as physics/math, streamlining the chemistry coursework, expanding the clinically oriented content such as the existing pharmacotherapy courses. Consider offering the pharmacy practice skills courses (e.g. Basic skills in clinical pharmacy, Basic skills in consulting) from the PharmD in the B.Sc Pharm program and reorganize the delivery of pharmacotherapy to focus the topics on disease conditions.

A deficiency identified by the committee was the lack of interprofessional education despite well-established health professional schools on campus. The School of Pharmacy faculty is responsible for teaching pharmacology to the medicine, nursing, and dentistry students in addition to the pharmacy students. They employ problem-based learning (PBL) in small groups of 8-10 students, and this appears to be an opportunity to easily implement interprofessional education.

Recommendation (important): Redesign the delivery of pharmacology PBL to intermix students from the various health professions in the small groups. Introduce patient cases that involve aspects pertinent to various disciplines to

[3] A dedicated curriculum review event which includes faculty and stakeholder representation

enhance group discussions and promote an understanding of interprofessional team member roles and scope.

The committee noted there is a minimal university oversight of the internship program. The internship provides varied experiences in community pharmacy, hospital pharmacy, HMOs, or industry. Students are required to find their own internship which is a paid experience under supervision of a pharmacist who must have 6 years of experience. The students are required to maintain a notebook and documentation of clinical scenarios or services provided. The notebooks are reviewed by the School of Pharmacy staff to ensure the students are achieving expectations. However, there is no developed syllabus for the internship, audit of sites, or an adequate quality control process. Additionally, the students noted that the learning experience varies by site, and they are not given enough preparation on the expectations for the types of clinical activities they should be engaged in during the rotation.

Recommendation (Essential): Appoint a clinical faculty member as the Director of the internship committee. Develop a syllabus for the internship experience outlining the learning objectives and expected activities for the internship site. Develop a strategic plan to expand internship sites and a process for quality review of the internship sites. Establish routine communication and support between the School of Pharmacy and internship sites using newsletters and professional development seminars for supervising pharmacists.

An important deficiency noted by the committee is the lack of experiential learning, outside of the internship, in the curriculum. There are no defined clinical rotations for students and a lack of acute care clinical experiences. Additionally, there are no introductory pharmacy practice experiences in years 1 or 2 to introduce the students to the profession of pharmacy and build their identity as a pharmacist. This is critical since the students will not be exposed to community pharmacy until the internship, which is positioned at the end of the degree program

Recommendation (Essential): Develop and establish introductory pharmacy practice experiences in the first- and second-years exposing students to the profession of pharmacy. Develop clinical rotations for year 4 exposing the students to the different pathways of acute care, ambulatory care clinics and pharmaceutical industry.

Excellence Program for B.Sc Pharm /M.Sc. is a combined program which identifies high quality students for direct admittance into the combined program.

The Doctor of Pharmacy (PharmD) is a three-year program which consist of clinical pharmacy courses and experiential education in health systems. Students are required to complete an independent research project which is mentored by senior

academic faculty. The courses outlined the curriculum are a mix of pharmacist skills courses, seminars, literature evaluation or specific disease conditions, such as neurobiology or hematology, but the curriculum does not appear to be constructed or mapped to achieve specific competencies of the clinical pharmacist. Clinical rotations should also have identified learning outcomes and a learning plan which are clearly defined for students and placements supervisors. Much international work has been done in the development of pharmacist competencies or entrustable professional activities. We refer the faculty to the American Association of Colleges of Pharmacy Core Entrustable Professional Activities for New Pharmacy Graduates, the Center for the Advancement of Pharmacy Education Educational Outcomes[4] and International Pharmaceutical Federation Global Advanced Development Framework[5] which outlines competencies for pharmacist practitioners.

Recommendation (Essential): Conduct a curriculum summit[6] including senior academic faculty, adjunct clinical faculty, and clinical instructors to develop a set of competencies or core entrustable professional activities for the PharmD graduate. Consider including stakeholders from the Ministry of Health and Professional Pharmacy Organizations. The goal of defining competencies and mapping the coursework to competencies will aid in standardization of the definition of a clinical pharmacist in Israel.

The Masters of Science (MSc.) is a two-year program composed of approximately 28 credits focused on chemistry/pharmacology, nanomedicine, drug development and forensic science and is open to any candidate with a science degree. Students must complete a research thesis. The MSc. coursework appears to be mapped to the major focus areas previously listed. The intended learning outcome is for the graduate to join a research team or continue training towards a doctoral degree. The thesis for the MSc is examined by two reviewers with a preference for at least one external reviewer. The grade for MSc consists of coursework, thesis, and final exam.

The Doctor of Philosophy (PhD) is a 4.5-year program which specializes in Pharmaceutical Sciences, Medicinal Chemistry, Clinical Pharmacy, or Pharmacology and culminates in an original research thesis. The Intended Learning Outcome for the program is defined vaguely and oriented towards drug development. This outcome could be further developed with specific skills and intended outcomes of

[4] Haines ST, Pittenger AL, Stolte SK, et al. Core Entrustable Professional Activities for New Pharmacy Graduates. American Journal of Pharmaceutical Education 2017; 81 (1) Article S2

[5] FIP. FIP Global Advanced Development Framework, version 1 2020 available at https://www.fip.org/file/4795

[6] A dedicated curriculum review event which includes faculty and stakeholder representation

graduating independent scientists leading in their field of expertise. The Ph.D. thesis committee consists of internal and external reviewers.

In this area of evaluation, the Committee determined that the Hebrew University is below the acceptable threshold level of performance.

3.5 Teaching and Learning

It is noted that all new faculty members are provided professional development in teaching skills. Teaching evaluations are overseen by the Unit for Teaching and Learning as well as the Head of the Curriculum committee. Faculty with poor teaching evaluations receive one on one mentoring from the Unit for Teaching and Learning with individualized feedback. The university should be acknowledged for this support of faculty in improving their teaching skills.

The university promotes the use of various teaching methods such as video recording lectures and posting them for student review; however, it is unclear how frequently teaching methods such as simulation training and flipped classroom strategies are being used in the program. Faculty reported traditional didactic lectures, problem-based learning, clinical seminars, and workshops employed. The self-evaluation indicates that the most common assessment method in didactic courses is based on performance in multiple choice question format written exams. Open ended questions or oral presentations are used but at a much lower frequency. Thus, students are given limited opportunities to develop important skills such as writing communication skills, oral presentation skills, peer feedback, and self-reflection.

Recommendation (Important): Encourage the faculty to utilize a wider range of teaching and evaluation methodologies that will enhance student learning. This can be achieved through a concerted effort with other faculty from the schools of medicine, nursing, and dentistry to develop case-based interprofessional education, simulation training, student peer feedback, and reflection. There may be an opportunity to learn new teaching methodologies from other health professional faculties, e.g., faculties of medicine, nursing, and dentistry.

In this area of evaluation, the Committee determined that the Hebrew University is below the acceptable threshold level of performance.

3.6 Faculty

The Institute for Drug Research with its 4 disciplines (Pharmaceutical Science, Medicinal Chemistry, Basic Pharmacology, and Clinical Pharmacy) at present has about 22 tenure-track research faculty positions, and is currently recruiting 6 additional faculty members. Among those, only 1 tenure-track faculty member is

fully associated with the Clinical Pharmacy discipline, and there are plans to recruit 3 additional tenure-track faculty members in this field. The clinical training of students is supported by 3 adjunct faculty members with part-time positions as Adjunct Lecturer to Adjunct Senior Lecturer. In our discussions, it remained unclear what the status of the adjunct faculty is, whether there is financial compensation for this position, and the criteria for promotion. Clinical faculty are appointed to the lecturer and senior lecturer track. Clinical faculty are not eligible for Professor track unless their research productivity is prolific.

The School / Institute of Drug Research also has 16 Emeritus Professors who continue to be active mainly in research, and less in teaching. Again, the vast majority of the emeriti belong to the basic research disciplines.

Faculty is recruited based mainly on the needs of the institution, research achievements, grant awards, and professional standing. Promotion and tenure are decided upon through the recommendations of professional and promotion committees, based on the candidate's achievements, external recommendation letters, and review letters solicited from internationally acclaimed experts in the respective field.

The committee was concerned that while this faculty distribution and promotion conditions were appropriate for a basic research-oriented Institute of Drug Research, the gross understaffing of clinically oriented faculty and the lack of a well-defined academic career track for clinical instructors is directly associated with the over-emphasis on basic sciences and the lack of clinical teaching and experiential learning, particularly in the B.Sc Pharm program. In particular, the obvious imbalance between pharmaceutical sciences and clinical pharmacy faculty jeopardizes the input of clinical pharmacists in the curricular design and clinical training of pharmacy students. Notwithstanding, discussions identified that Clinical faculty are thought leaders who will advance the profession of pharmacy in Israel. Even with the planned new faculty appointments, less than 14% of the faculty will belong to the clinical fields. Since the vast majority of the graduates will pursue careers as pharmacists with patient-facing roles, the School of Pharmacy clearly needs to strengthen the clinical training of its graduates, and this change cannot occur without a substantial increase in the clinically-oriented faculty. The committee believes that the lack of clinical faculty in senior academic staff is not in the best interest of the students being trained for the profession of pharmacy.

Recommendation (Essential): Conduct a needs assessment of the number of clinical pharmacy faculty needed for clinical and experiential learning in the B.Sc Pharm and PharmD programs, including oversight of clinical rotations and internship. Dramatically increase the number and strengthen the standing of clinical faculty, including pharmacists actively practicing in the clinical field, in order to achieve a

better balance in the representation of clinical pharmacy versus pharmaceutical sciences. Promotion criteria for these faculty members must be different from those applicable to basic science researchers. Consider establishing a clinical tenure career track (as known in medical faculties). For adjunct clinical teachers/instructors, clearly define the promotion criteria, obligations, compensation, and engage them for discussions on curriculum changes, student and teacher assessments, and alternative teaching techniques. These recommendations will ensure that proper balance of clinical, teaching, and research expertise is maintained in the school's faculty.

For each junior faculty member, a senior faculty member is assigned as mentor on various topics, including promotion. In our Discussions, Junior Faculty members expressed satisfaction with the collegiality and support they received from senior colleagues, and it was our impression that the faculty had a strong sense of cohesion and group spirit and an enthusiastic commitment to both their research and teaching obligations.

The teaching load of the faculty was explored. It was reported that Faculty members are expected to teach about 168 hours (per semester), a weekly teaching load of about 6-8 hours. In our discussions, most faculty members found the teaching load acceptable, and most appeared to greatly enjoy teaching. However, with the recent sharp increase in student numbers in the B.Sc Pharm program (from about 335 students in 2017-1019 to 602 students in 2021/22), the workload is expected to increase, and it is unclear whether the planned new appointments can compensate for this increase. In particular, teaching labs or clinical rounds cannot be taught in larger student groups, and it appears that substantial changes will be necessary to accommodate vastly increased student numbers. With the lack of trained pharmacists in Israel, the trend to higher student numbers is likely to persist in the near future. The increase in B.Sc Pharm is also likely to increase applications and/or students on the PharmD and MSc programmes once these students complete their undergraduate degree.

Recommendation (Essential): The School of Pharmacy should develop a plan outlining how it will respond to the sharp increase in student enrolment. Teaching load is expected to increase substantially, and in courses where experiential learning limits group size (e.g., any kind of laboratory work, clinical rotation, simulation), it may become necessary to explore new teaching venues in addition to engaging more teaching faculty.

The school emphasizes diversity and makes great efforts to reduce gender asymmetry and strengthen minority representation. As a result, to date, more than half of the B.Sc Pharm students are Arab Israelis, and a special program has been initiated to prepare members of the Jewish Ultra-Orthodox community for

pharmacy studies (this program has only recently been initiated and was therefore not evaluated). However, among faculty positions, especially in the senior ranks, there is still a strong male preponderance, and non-Jewish faculty members are infrequent. It appears that there is greater diversity among the most recent faculty appointments.

Recommendation (Desirable): To continue the success in attracting a diverse student population, it is important that the faculty role models reflect the diversity of the students. It is recommended that the School focus on recruiting diverse faculty with track record of academic achievements.

In this area of evaluation, the Committee determined that the Hebrew University is below the acceptable threshold level of performance.

3.7 Research

The Institute for Drug Research in the School of Pharmacy encompasses 3 traditional basic research disciplines (Pharmaceutical Science, Medicinal Chemistry, Pharmacology), and about a decade ago the discipline of Clinical Pharmacy was added. The combination of the 4 disciplines in the same Institute, in conjunction with the close collaboration with the pharmaceutical industry, support the different stages of drug development, from drug design, pharmaceutical optimization, to clinical application. For many years, the Institute has been exceptionally successful in securing competitive grants (both national and international), publishing papers in leading peer-reviewed journals, developing new medications or medication delivery systems, and filing patents. Research fields include molecular diagnostics, novel drug discovery, drug modelling and design, advanced drug delivery, and pharmacology of neuroscience, cancer, and immunology. Novel fields represented include nanomedicine, big data research, 3D-printing of drug-delivering devices, metabolomics for elucidation of mechanisms of drug action and drug discovery, computational drug design, and new technologies for drug delivery.

Commendation. The committee acknowledged the international reputation of the Institute for Drug Research at HUJI for sustained excellence in research.

Academic positions are based on research achievements, mainly published articles, patents, grants, and international visibility. Thus, not surprisingly, the number of tenure-track faculty positions in the field of clinical pharmacy is small (1 out of 21), and compared to basic science, little clinical research is performed at the School of Pharmacy. The main fields of clinical research are pharmacoepidemiology, database studies on medication safety and effectiveness, and drug utilization.

The Institute of Drug Research offers basic sciences MSc programs in pharmaceutical sciences, pharmacology, medicinal chemistry, forensic sciences, as well as a science PhD degree, the latter under the auspices of the central Authority for Advanced studies in Experimental Sciences of HUJI. The PharmD program has a clinical orientation, although graduates also complete a research project, usually in a clinical field.

Recommendation (Essential): Strengthen clinical research by greatly enlarging and strengthening the clinical faculty. The tools and skills for clinical research should be integrated into the undergraduate studies in the same way students are encouraged to go into basic research. As the majority of the graduates of the School of Pharmacy will eventually be pharmacists practicing in clinical fields, it is important that clinical research is represented and role-modelled to students in order to encourage engagement in clinical research.

In this area of evaluation, the Committee determined that the Hebrew University exceeds the expected threshold level of performance.

3.8 Students

The review committee met with 4 B.Sc Pharm students (2 second years and 2 fourth year) and four PharmD and PhD students. Two of the B.Sc Pharm students were on the excellence pathway for B.Sc Pharm+ MS; one year 2, and one year 4). Alumni were mainly engaged in research, both in clinical (via the Pharm D program) or pharmaceutical science (via the MSc/PhD programs). One was now working in industry. No community pharmacist alumni were present.

The students were all happy to discuss their studies and were pleased with their choice of the University, degree and track while acknowledging that the degrees were challenging with a high workload. They described learning new topics each day and the need to have time to assimilate new material. They also reported a significant number of exams in a short period (4 exams in one week). Students in the B.Sc Pharm program explained that they could not link some of the courses to their pharmacy or their pharmaceutical science research careers and thought these should be removed. These were linked to physics, e.g. 'Physics and Electricity'. The PharmD students noted that becoming a clinical pharmacist was their professional goal and the internship at Hadassah hospital inspired them to pursue clinical pharmacy. This highlights the need to expand internship experiences to areas where students are exposed to clinical pharmacy roles. The PhD students noted that despite being on the research track, they would like to see more clinically relevant courses incorporated into the curriculum since this training would only enhance their ability to formulate meaningful research.

Recommendation (Essential): The School of Pharmacy should review the student workload with careful attention to the number and scheduling of assessments to ensure students have time to assimilate and integrate new knowledge/skills and have adequate time for assessment preparation/revision.

Students and alumni were mainly positive about the teaching and support provided by faculty staff and also the peer support scheme (e.g., PharmD students teaching classes in the B.Sc Pharm program). Advice and support for their role in peer support was provided by the student union and also Dean of Students. All students knew about the pathways for a career in research and the PharmD pathway for becoming a clinical pharmacist. However, they indicated that community pharmacy as a career was not explained.

Recommendation (Essential): The School of Pharmacy should also include information for students on the current and future role of the community pharmacist in Israel given that it was reported that many students will eventually work in community pharmacy.

Current B.Sc Pharm and alumni acknowledged they were provided with some information by the School of Pharmacy about the year 4 internship. However, they would also like more support, explaining that they mainly learned about internships by asking friends in the year above. Contacting the HMO or working as a 'flower' in a community pharmacy was also a route to an internship. Some alumni described that obtaining an internship could be challenging. The alumni also explained that for students searching a placement for internship there was no formal way to assess the content and quality of a specific placement, and they gained this information from people who had previously undertaken this internship.

Recommendation (Essential): The School of Pharmacy should provide B.Sc Pharm students with more information and support on gaining their internships and also information on the internship programme and quality of the internships/site. The School of Pharmacy will require additional administrative support for these activities.

The committee met 2 PharmD students who reported that the instructors in the clinical programme were in general very supportive, but that the quality of teaching could greatly vary among different rotations and instructors. They commented on the fast pace of the course, the self-study and assessment requirements, and the need to have sufficient time to study. They also described their role as teacher assistants in the undergraduate Pharmacotherapy courses and clinical role-playing scenarios.

Recommendation (Essential): The School of Pharmacy should review the PharmD student workload to ensure students have time to assimilate and integrate new knowledge/skills and have adequate time for assessment preparation/revision.

Most of the alumni reported having kept in touch with colleagues from their cohort. However, most acknowledged that an alumni community would be good vehicle to receive information on professional development courses and for networking.

Recommendation (Desirable): The School of Pharmacy should develop an alumni network to support wider involvement of alumni with the school and to promote dissemination of continuing professional development (CPD)/continuing education courses and networking. Additional administrative support will be required for this activity.

The panel met with 3 MSc students and 2 PhD students who were enthusiastic and positive about their research studies and acknowledged the support, mentorship, and direction provided by their supervisors. However, they were less enthusiastic about the general study programme, an example provided being insufficient courses within highly specialized fields, e.g. chemistry. Some PhD students explained that they did not consider there was increased challenge / complexity in the courses when progressing from the MSc to the PhD programme. MSc/PhD students identified that a course in scientific writing is included in the curriculum. However, they considered that they needed more guidance for writing skills for scientific writing. Some students considered that this would be the responsibility of their PhD supervisor/mentor. The students present at the meeting reported that they did not have regular PhD seminars, where PhD students present to each other and to a faculty supervisors/staff their current research. This could also include advice on how to structure their research, and discussion on optimal ways to present their findings

The regulations of the PhD degree and the requirements and assessment of the thesis are governed by the central body of the Hebrew University and not of the School of Pharmacy, and these aspects were therefore not discussed.

Recommendation (Essential): The School of Pharmacy should review scope, content and level of the general courses to support both MSc and PhD students, including PhD students who have progressed from MSc to PhD at the School of Pharmacy. This should include courses and mechanisms to support scientific writing and presentation of ongoing research by PhD students during their degree.

When evaluating the B.Sc Pharm program , the Committee determined that the Hebrew University is below the acceptable threshold level of performance.

When evaluating the PharmD and MSc and PhD, the Committee determined that the Hebrew University meets the acceptable threshold level of performance.

3.9 Infrastructure

Given that the committee's visit was virtual, we could only obtain a limited perspective of the School's infrastructure and facilities. The School of Pharmacy is located next to the Hadassah Ein Kerem Medical Center and the Faculty of Medicine, facilitating the collaboration with the hospital's clinical units and physicians (e.g., for the clinical rotations of the PharmD program). The building houses two lecture halls, seminar rooms, research labs, two teaching labs, and an animal facility. Some courses (mainly for undergraduates) are also taught in facilities of nearby campuses (Faculty of Medicine, Faculty of Natural Sciences). The researchers have access to a wide range of advanced analytical and imaging instruments. The Dean also presented plans for a new simulation center to be built soon, which will allow integrating simulation as an educational tool.

Recently, renovations of the School's main building were completed, which increased lab space (on the 5th floor) and an improved the air conditioning system. However, there appears to still be a lack of laboratory space, in particular for newly recruited faculty. According to the School's policy, Emeritus faculty members retain their lab and office space. With a comparatively high ratio of active emeriti to tenure-track faculty (approximately 13/21), this policy appears to limit the availability of space for new faculty.

Recommendation (Desirable): If lack of lab space limits the professional development of the junior faculty, consider designing and implementing a policy to gradually and respectfully transfer lab space from emeriti to active faculty members.

In this area of evaluation, the Committee determined that the Hebrew University clearly meets the expected threshold level of performance.

Section 4: Recommendations

Recommendation (Essential): Establish a new reporting structure within Health Sciences whereby all health professional schools are led by their respective Dean who reports to a senior leader responsible for the oversight of all health professional schools. It is critical that this senior leader is not the Dean of a health profession school (i.e. Medicine) to remove any bias or conflict of interest in resource allocation to the various health professions schools. Similarly, the School of Pharmacy would profit from achieving more independence from the Institute of Drug Research, to allow a greater autonomy and focus on transforming the undergraduate training according to the pharmacists' expanding clinical roles.

Establish administrative offices within the School of Pharmacy responsible for the oversight of admissions, student affairs/academic oversight, education (undergraduate and experiential) and research. This would allow the School of Pharmacy to have greater autonomy and potential for independent growth and development.

Recommendation (Essential): Establish procedures to ensure that the internship program is robustly quality-assured by the School of Pharmacy and meets the learning objective stated in the B.Sc Pharm degree

Recommendation (Essential): For the next CHE review, an organized and self-reflective self-evaluation report and appendices will be required. This report and appendices should be reviewed and proofread for flow, presentation, and completeness. The report should be written with careful consideration that a panel unfamiliar with the HUJI will be undertaking this evaluation. It is highly recommended that all faculty read the report and provide feedback prior to its submission. The report must demonstrate self-reflection and analysis were used to identify what is needed to improve the programmes.

Recommendation (Essential): A quality assurance procedure must be implemented to assess the stability and quality of placements sites for the B.Sc Pharm internships and the PharmD clinical placements. This quality assurance should be ongoing before, during, and after these students are engaged in their placements. It should include both the site facilities and the suitability of the pharmacist or other health care professional (as appropriate) to supervise the students' learning in the placement/internship. This should extend beyond the number of years in practice to include assessment of their teaching/mentoring and clinical/professional practice experience. We recognize that this will require an increased administrative workload and recommend additional dedicated administrative support essential for this QA process.

Recommendation (Essential): The view of stakeholders, i.e. professional pharmacy organizations and societies, the Ministry of Health, and the patients/the public, should be routinely sought and used to guide change in the pharmacy curriculum. This is essential to ensure up to date curricula which meet the clinical and pharmaceutical science needs for the future roles of pharmacist in Israel as the medication expert focused on medication design, development, and regulations, but also on the safe and effective use of medications by patients and healthcare professionals.

Recommendation (Essential): Building on the individual review of course content for degrees taught by the departments, the School of Pharmacy needs to develop a robust mechanism to allow each degree to be reviewed annually in a holistic and

collaborative way to ensure new material relevant to the learning outcome of the programme are included/updated, and that redundant or outdated material is removed.

Recommendation (Essential): The views of students on their learning is important, and the School of Pharmacy needs to identify enhanced mechanisms to support greater completion of student evaluations, so that these results can be used to support review of the degree programmes. Additionally, curriculum evaluation through ongoing routine peer faculty review will enhance the effectiveness of the curricular updates.

Recommendation (Essential): Learning outcomes together with a learning plan including essential core activities should be developed for the B.Sc Pharm internship. This will support both students and internship supervisor to ensure the learning outcomes are achieved and essential core activities are completed.

Recommendation (Essential): The School of Pharmacy needs to review its assessment of clinical / professional skills to ensure standardized and robust methods are used to assess students' performance against learning objectives. This should include work-based assessment skills in the B.Sc Pharm internship and the PharmD placements.

Recommendation (Essential): The School of Pharmacy needs to develop a robust peer review mechanism for ongoing formal assessment of teaching quality by all staff who teach students on the B.Sc Pharm, MSc and PharmD programmes. Opportunities to gain new teaching knowledge and skills should be provided to all who teach to develop and enhance their teaching practice and not solely to address identified poor performance.

Recommendation (Essential): Conduct a curriculum summit[7] including senior academic faculty, clinical instructors, representatives from internships to examine and streamline the existing curriculum with the goal of introducing more clinically oriented content. Consider integrated science curriculum models for redesigning the delivery of foundational science courses. Consider conducting a peer review of the foundational courses such as physics/math, streamlining the chemistry coursework, expanding the clinically oriented content such as the existing pharmacotherapy courses. Consider offering the pharmacy practice skills courses (e.g. Basic skills in clinical pharmacy, Basic skills in consulting) from the PharmD in the B.Sc Pharm program and reorganize the delivery of pharmacotherapy to focus the topics on disease conditions.

[7] A dedicated curriculum review event which includes faculty and stakeholder representation

Recommendation (Essential): Appoint a clinical faculty member as the Director of the internship committee. Develop a syllabus for the internship experience outlining the learning objectives and expected activities for the internship site. Develop a strategic plan to expand internship sites and a process for quality review of the internship sites. Establish routine communication and support between the School of Pharmacy and internship sites using newsletters and professional development seminars for supervising pharmacists.

Recommendation (Essential): Develop and establish introductory pharmacy practice experiences in the first- and second-years exposing students to the profession of pharmacy. Develop clinical rotations for year 4 exposing the students to the different pathways of acute care, ambulatory care clinics and pharmaceutical industry.

Recommendation (Essential): Conduct a curriculum summit including senior academic faculty, adjunct clinical faculty, and clinical instructors to develop a set of competencies or core entrustable professional activities for the PharmD graduate. Consider including stakeholders from the Ministry of Health and Professional Pharmacy Organizations. The goal of defining competencies and mapping the coursework to competencies will aid in standardization of the definition of a clinical pharmacist in Israel.

Recommendation (Essential): Conduct a needs assessment of the number of clinical pharmacy faculty needed for clinical and experiential learning in the B.Sc Pharm and PharmD programs, including oversight of clinical rotations and internship. Dramatically increase the number and strengthen the standing of clinical faculty, including pharmacists actively practicing in the clinical field, in order to achieve a better balance in the representation of clinical pharmacy versus pharmaceutical sciences. Promotion criteria for these faculty members must be different from those applicable to basic science researchers. Consider establishing a clinical tenure career track (as known in medical faculties). For adjunct clinical teachers/instructors, clearly define the promotion criteria, obligations, compensation, and engage them for discussions on curriculum changes, student and teacher assessments, and alternative teaching techniques. These recommendations will ensure that proper balance of clinical, teaching, and research expertise is maintained in the school's faculty.

Recommendation (Essential): The School of Pharmacy should develop a plan outlining how it will respond to the sharp increase in student enrolment. Teaching load is expected to increase substantially, and in courses where experiential learning limits group size (e.g., any kind of laboratory work, clinical rotation, simulation), it may become necessary to explore new teaching venues in addition to engaging more teaching faculty.

Recommendation (Essential): Strengthen clinical research by greatly enlarging and strengthening the clinical faculty. The tools and skills for clinical research should be integrated into the undergraduate studies in the same way students are encouraged to go into basic research. As the majority of the graduates of the School of Pharmacy will eventually be pharmacists practicing in clinical fields, it is important that clinical research is represented and role-modelled to students in order to encourage engagement in clinical research.

Recommendation (Essential): The School of Pharmacy should review the student workload with careful attention to the number and scheduling of assessments to ensure students have time to assimilate and integrate new knowledge/skills and have adequate time for assessment preparation/revision.

Recommendation (Essential): The School of Pharmacy should also include information for students on the current and future role of the community pharmacist in Israel given that it was reported that many students will eventually work in community pharmacy.

Recommendation (Essential): The School of Pharmacy should provide B.Sc Pharm students with more information and support on gaining their internships and also information on the internship programme and quality of the internships/site. The School of Pharmacy will require additional administrative support for these activities.

Recommendation (Essential): The School of Pharmacy should review the PharmD student workload to ensure students have time to assimilate and integrate new knowledge/skills and have adequate time for assessment preparation/revision.

Recommendation (Essential): The School of Pharmacy should review scope, content and level of the general courses to support both MSc and PhD students, including PhD students who have progressed from MSc to PhD at the School of Pharmacy. This should include courses and mechanisms to support scientific writing and presentation of ongoing research by PhD students during their degree.

Recommendation (Important): Redesign the delivery of pharmacology PBL to intermix students from the various health professions in the small groups. Introduce patient cases that involve aspects pertinent to various disciplines to enhance group discussions and promote an understanding of interprofessional team member roles and scope.

Recommendation (Important): Encourage the faculty to utilize a wider range of teaching and evaluation methodologies that will enhance student learning. This can be achieved through a concerted effort with other faculty from the schools of

medicine, nursing, and dentistry to develop case-based interprofessional education, simulation training, student peer feedback, and reflection. There may be an opportunity to learn new teaching methodologies from other health professional faculties, e.g., faculties of medicine, nursing, and dentistry.

Recommendation (Desirable): To continue the success in attracting a diverse student population, it is important that the faculty role models reflect the diversity of the students. It is recommended that the School focus on recruiting diverse faculty with track record of academic achievements.

Recommendation (Desirable): If lack of lab space limits the professional development of the junior faculty, consider designing and implementing a policy to gradually and respectfully transfer lab space from emeriti to active faculty members.

Recommendation (Desirable): The School of Pharmacy should develop an alumni network to support wider involvement of alumni with the school and to promote dissemination of continuing professional development (CPD)/continuing education courses and networking. Additional administrative support will be required for this activity.

Signed By:

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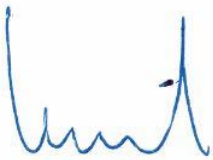
Prof. Cate Whittlesea Prof. Linda Awdishu



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Prof. Daniel Kurnik

Appendix 1 – Letter of appointment

October 2021

Prof. Cate Whittlesea
School of Pharmacy
University College London
United Kingdom

Dear Professor,

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 chair of the Council for Higher Education's Committee for the Evaluation of **Pharmacy** departments. In addition to yourself, the composition of the Committee will be as follows: Prof. Daniel Kurnik and Dr. Linda Awdishu.

Ms. Pe'er Baris-Barnea will be the coordinator of the Committee.

I wish you much success in your role as a member of this most important committee.

Sincerely,

Prof. Ido Perlman
Vice Chair,
The Council for Higher Education (CHE)

cc: Dr. Varda Ben-Shaul, Deputy Director-General for QA, CHE
Ms. Maria Levinson-Or, Senior Advisor for Evaluation and Quality Enhancement
Ms. Pe'er Baris-Barnea, Committee Coordinator

Appendix 2 – visit schedule

Pharmacy Evaluation Committee - Schedule of online visit

Hebrew University

Wednesday, December 1st, 2021

*The visit will be divided into 2 half days, starting at 04:30pm (Israel time)

*Meetings are conducted in a Q&A format

Time	Subject	Participants
16:30-16:50	Meeting with the Heads of the Institution	Prof. Asher Cohen -President Prof. Barak Medina -Rector Prof. Avihai Hovav- Head of the Office of Academic Assessment & Evaluation
16:50-17:45	Presentation and Meeting with the Dean of Faculty of Medicine and Head of School of Pharmacy	Prof. Dina Ben Yehuda-Dean, Faculty of Medicine Prof. Boaz Tirosh-Head of the School of Pharmacy
17:45-18:00	Break	
18:00-18: 45	Meeting with the Head of School of Pharmacy	Prof. Boaz Tirosh-Head of the School of Pharmacy
18:45-19:15	Meeting with Representatives of the Teaching Committee (Q&A)	Prof. Rami Yaka Prof. Ilan Matok

Thursday, December 2nd, 2021

16:30-	Meeting with Former Head of Clinical Pharmacy Program	Prof. Amnon Hoffman
16:50-	Meeting with senior academic staff * (including academic heads of programs)	Prof. Avi Priel, Prof. Ofra Benny Prof. Galia Blum Prof. Eylon Yavin
17:45-	break	
18:00-	Meeting with Adjunct academic staff *	Dr. Michel Afargan Dr. Avi Swed Dr. Rina Komargodski Dr. Victoria Rotshild Prof. Sara Eyal
18:00-	Meeting with Clinical instructors*	Dr. Bruria Hirsh-Raccah Dr. Shiri Guy-Alfandary
18:30-	break	
19:00-	Meeting with BSc. Pharm students**	Tomer Rabinovich, 2nd year Lital Taitler, 2nd year Regina Giryes, 4th year Daria Gafarov, 4th year (Excellence Program)
19:00-	Meeting with MSc. students**	Gil Daniels, MSc Student Shiran Niazov, MSc Student Yara Sheeni, MSc Student Up to 8 participants
19:30-	Meeting with Alumni**	Michael Aronov Dr. Muhammad Mahameed Dr. Olga Vaksman Dr. Reem Masarwa

		Wajeha Hamoudi, PhD Candidate Tala Amawi, PhD Candidate Danny Roder, PharmD Candidate Yuval Zeev, PharmD Candidate
19:30-	**Meeting with Ph.D and Pharm D students****	
20:00- 20:15	**Closing Meeting with Heads of the Institution**	Prof. Asher Cohen -President Prof. Barak Medina -Rector Prof. Avihai Hovav- Head of the Office of Academic Assessment & Evaluation
20:15- 20:45	**Closing Meeting with Head of School of Pharmacy**	Prof. Boaz Tirosh-Head of the School of Pharmacy