



# EVALUATION OF PHARMACY STUDIES – GENERAL REPORT

COMMITTEE FOR THE EVALUATION OF PHARMACY SCHOOLS IN  
ISRAEL

December 2021

## Section 1: Background and Procedures

- 1.1 In the academic year 2019-20 the Council for Higher Education [CHE] put in place arrangements for the evaluation of study programmes in the field of Pharmacy in Israel.
- 1.2 The Higher Education Institutions [HEIs] participating in the evaluation process were:
  - Ben-Gurion University
  - The Hebrew University
- 1.3 To undertake the evaluation, the Vice Chair of the CHE appointed a Committee consisting of<sup>i</sup>:
  - [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.

- 1.4 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.
- 1.5 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 further

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<sup>i</sup> The committee's letter of appointment is attached as **Appendix 1**.

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.

- 1.6 In undertaking this work the committee considered matters of International context, Research, Quality Assurance, Quality enhancement and capacity building.

## Section 2: Recommendations

The committee would like to thank the faculty and leadership at the Hebrew University of Jerusalem (HUJI) and Ben-Gurion University of the Negev (BGU) responsible for the undergraduate and postgraduate programs with whom we met online for their engagement with the review process and spirit of cooperation. We regret that we were unable to visit in person due to the current COVID-19 pandemic, but hope that our observations and recommendations will be helpful to the Council of Higher Education and each of the Schools of Pharmacy as they review and develop their programs. The following are our general observations and recommendations.

- All programs reviewed have dedicated faculty that are providing a high level of professional education at the bachelore (B.Pharm/ B.Sc Pharm), Masters, PharmD (HUJI only) and PhD level (HUJI only). We congratulate the faculty for a strong sense of professionalism and commitment to student support and learning. The committee also acknowledged the international reputation of the Institute for Drug Research at HUJI for sustained excellence in research.
- The committee identified that the organisation of both Schools of Pharmacy within their respective institutions was suboptimal. The committee considered that the Schools of Pharmacy should be independent institutions within the Health Faculties dedicated to the training of pharmacists, similar to the status of Schools of Medicine for the training of physicians. This would grant the Schools of Pharmacy greater autonomy for filling faculty and administrative positions.
- The numbers of administrative staff at both Schools of Pharmacy were suboptimal, and increasing the number of administrative staff at both Schools is needed to relieve the workload of the academic staff members. The necessary administration and quality assurance required for work place-learning outside the schools (i.e., experiential learning during clinical rotations and internships) require investment in additional administrative staff.
- All University-based programs include productive researchers on their faculty. However, for most programs, with the exception of the pharmaceutical science-based MScs and PhDs at HUJI, there is a need to increase the number of full-time tenured core faculty staff with expertise in clinical pharmacy. This is likely to require both universities to develop and implement criteria for recruitment and promotion of clinically oriented faculty, since they are likely different from those of more basic research scientists. Similarly, both Schools of Pharmacy should regulate the standing and association of the many adjunct faculty members.
- We recommend that both HUJI and BGU conduct a needs assessment of the number of clinical pharmacy faculty required to oversee the undergraduate and postgraduate courses including the clinical rounds, and the internship. This is to ensure plans can be put in place to recruit sufficient clinical faculty into academic appointments of a clinical academic track to balance the representation of pharmaceutical sciences and clinical pharmacy. This is necessary to ensure that an appropriate balance of clinical, teaching, and research expertise is maintained.

- Both Schools of Pharmacy need to develop a robust peer review mechanism for the ongoing formal assessment of the teaching quality of all staff members who teach students on the undergraduate and postgraduate programmes.
- At both Schools of Pharmacy, female students constituted the majority of the student body. However, the percentage of women among the core faculty members was considerably lower. Similarly, as a result of strong outreach programs into minorities, students from various non-Jewish minorities were well represented in the student body. This was not reflected in staff appointments. The committee recommend both Schools of Pharmacy continue the encouraging recruitment of faculty members with diverse backgrounds in gender, ethnicity, and religion.
- In general, the Master's, PharmD and PhD students and alumni we met were pleased with the education they received and spoke highly of the programs they attended.
- Although in general, the B.Pharm/B.Sc Pharm, students and alumni we met with spoke highly of the programs they attended, they recommended review of the pharmaceutical science curriculum to ensure relevance and integration of science subjects to the current and future clinical and patient-facing role of the pharmacist.
- We recommend that both Schools of Pharmacy conduct a curriculum review summit<sup>ii</sup> including senior academic faculty, clinical instructors, and representatives from internships to streamline the existing B.Pharm/B.Sc Pharm curricula and introduce greater clinically-oriented content. They should consider integrated science curriculum models for redesigning the delivery of foundational science courses. Peer review of the foundational science courses should assess alignment with the roles of the pharmacist focused on both patient and medicine. Clinically-oriented content such as pharmacotherapy courses should be expanded. Prioritization of clinical oriented curriculum by disease states have been published in international toolkits to assist the faculty in curriculum redesign.<sup>1</sup>
- The Schools of Pharmacy need to develop a robust mechanism to support a holistic review of the B.Pharm/B.Sc Pharm to ensure not only that new materials relevant to the learning outcome of the programme are included/updated, but also that redundant or outdated material is removed.
- The view of stakeholders, e.g., HMOs, hospitals, industry, community pharmacy organizations, professional pharmacy societies, the Ministry of Health, and patient/the public, should be routinely sought and used to review and develop the curriculum of all programmes. This is to ensure the curricula are up to date and meet the clinical and pharmaceutical science needs for the current and future roles of pharmacists in Israel as medication experts focused both on medication design, development, and regulations, but also on the safe and effective use of medications by patients and healthcare professionals.
- Learning outcomes including essential core activities should be developed for the B.Pharm/B.Sc Pharm internship and the clinical rounds. This will support both students and work-based supervisors to ensure the learning outcomes are achieved and essential core activities are completed.
- Lack of work-based experiential learning in years 1 and 2 were identified in the B.Pharm and B.Sc Pharm degrees at BGU and HUJI. There is a need to develop and establish introductory

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<sup>ii</sup> A dedicated curriculum review event which includes faculty and stakeholder representation

pharmacy practice experiences in the first and second years in order to expose students to the profession of pharmacy. In the third and fourth years, clinical rotations need to be developed and expanded to expose the students to the different career pathways of community pharmacy, acute care, ambulatory care clinics, and pharmaceutical industry.

- During our review, we learned that there was a shortage of pharmacists in Israel. We would encourage the Council of Higher Education to work with the Ministry of Health to address the shortfall and identify the resources required by HUJI and BGU to meet the demand for teaching more B.Pharm/ B.Sc Pharm students.
- A deficiency identified by the committee was the lack of interprofessional education despite well-established health professional schools on campus at both HUJI and BGU. The Schools of Pharmacy faculty are responsible for teaching medicine, nursing, and physiotherapy students etc in addition to the pharmacy students. Therefore, both Schools of Pharmacy are recommended to use problem-based learning or team-based learning methods to intermix students from the various health professions in 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.
- A documented quality assurance procedure must be written which describes how the internship committee, at both BGU and HUJI, assesses the stability and quality of placement sites for the B.Pharm/ B.Sc Pharm 6 month-internships and also clinical rotations/placements undertaken in the BGU B.Pharm and the HUJI PharmD program. Quality assurance should be extended so that it takes place before, during and after these students are engaged in the internship. This documentation and process should include both the site facilities and learning outcomes for this experiential learning and also the suitability of the pharmacist or other health care professional (as appropriate) to supervise the students' learning in the placement/internship. This should also include assessment of their teaching/mentoring and also professional practice experience. We recognise that this will require additional administration and recommend that additional dedicated administrative support is essential for this QA process.
- The Council of Higher Education should appoint a task and finish group to undertake a review to establish learning outcomes/competencies standards for the undergraduate degrees, i.e. B.Pharm/B.Sc Pharm. Learning outcomes for the UK undergraduate Master of Pharmacy (MPharm) degree are published by General Pharmaceutical Council in 2011<sup>2</sup> & 2021<sup>3</sup> This would ensure that the students graduating with these degrees are at a standard required to work as a pharmacist in Israel. As registered pharmacists are required to integrate their pharmaceutical and clinical knowledge for the benefit and safety of patients, we would strongly encourage this group to consider strategies to ensure the undergraduate degrees leading to registration as a pharmacist in Israel draw on the pedagogical strategies of integration, e.g., the 'Harden integration ladder'<sup>4</sup> and 'the spiral curriculum'<sup>5</sup>.
- The Council of Higher Education will need to review the financial impact and availability of experiential placements through the B.Pharm/B.Sc Pharm programmes because this experience is vital to the development of competent pharmacists.
- It was reported that the Ministry of Health no longer required students graduating from the B.Pharm (BGU) or B.Sc Pharm (HUJI) to undertake a registration exam because of the high number of students who passed this exam. The committee considers this is suboptimal practice and strongly encourages the Ministry of Health to review the content and reinstate

this registration exam. We recommend that the exam should focus on the key understanding required for a pharmacist to practice on day 1 of registration, and that patient safety should be the focus of this registration exam. Review of similar registration exams undertaken in other countries is also recommended.

- The Council of Higher Education and the Ministry of health should review current practice which allows B.Pharm/ B.Sc Pharm student to undertake their 6-month internship in a non-patient focused environment, e.g., industry. Patient safety should be uppermost when reviewing this practice as students can currently graduate and receive their license without patient-focused experience in practice. The committee strongly recommends that such internships should not be permitted.
- The Schools of Pharmacy need to review their assessment of clinical / professional skills to ensure standardised and robust methods are used to assess students' performance against learning objectives. This should include work-based assessment skills in the B.Pharm/ B.Sc Pharm clinical rotations and internship and the clinically orientated MSc and PharmD programs.
- Both universities promote the use of various teaching methods such as video recording lectures and posting them for student review; however other teaching methods such as simulation training and flipped classroom strategies appear to be less used in the programmes with traditional didactic lectures, problem-based learning, clinical seminars, and workshops employed. In addition, the most common assessment method in didactic courses is based on performance in multiple choice written exams. Open-ended questions or oral presentations are used at both Schools of Pharmacy but at a lower frequency, especially in the undergraduate programs. Thus, students are given limited opportunities to develop important skills such as writing communication skills, oral presentation skills, peer feedback, and self-reflection. Therefore, we recommend the faculty at both Schools of Pharmacy to utilize a wider range of teaching and evaluation methodologies that will enhance student learning. There may be an opportunity to learn new teaching methodologies from other health professional faculties such as the faculty of medicine, nursing, etc.
- Overall, within the postgraduate clinically-focused degrees (PharmD at HUJI and Masters in Community Clinical Pharmacy at BGU) it would be helpful to ensure that programs are teaching contemporary practices and procedures and that this considers international perspectives. For example, the postgraduate curriculum should be reviewed with consider of the 'FIP Global Advanced Development Framework, version 1' (FIP 2020)<sup>6</sup> and the 'FIP Global Competency Framework: Supporting the development of foundation and early career pharmacists Version 2' (FIP 2020)<sup>7</sup>.
- The committee learned that in Israel there is no clear definition of the standing and competencies required from clinical pharmacists, or licensure by the Ministry of Health. Following registration as a pharmacist with a bachelor's degree, there was confusion regarding the underpinning education and training required to practice as a Clinical Pharmacist. Graduates of two programs, the PharmD (HUJI) and MSc in Community Clinical Pharmacy and Regulatory Management (BGU), are currently considered "Clinical Pharmacists", although there are large differences in the scope, duration, and study intensity between these programs. 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<sup>8</sup>, and International Pharmaceutical Federation Global Advanced Development Framework<sup>6</sup> which outlines competencies for pharmacist practitioners. Therefore, we would urge the Ministry of Health in collaboration with the Professional Pharmacy Organizations, HUJI, and BGU to define required competencies and learning objectives expected from a clinical pharmacist. Thereafter, mapping the coursework to competencies will aid in standardization of the definition and training of a clinical pharmacist in Israel.

- We identified that there are barriers for currently registered pharmacist to undertake the PharmD (HUJI) training as ‘clinical pharmacists’ because of the full-time requirement for this program. We strongly encourage the Council of Higher Education to work with HUJI and BGU to ensure that postgraduate degrees are available in robust flexible part-time delivery formats to allow the upskilling of pharmacists in Israel to meet current and future needs to train clinical pharmacists as part of the healthcare workforce in both hospital and primary care.
- During our meetings we learned that in the future, pharmacy technicians may be trained to expand the current pharmacy workforce. We strongly advise the Ministry of Health that pharmacy technicians should be regulated, as they are in many countries, e.g. United Kingdom. We also strongly advise the Council of Higher Education to identify the competencies required for that qualification for pharmacy technicians, and to support the development of comparable courses for the training of pharmacy technicians.

## References

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	Management, administration <sup>1</sup>	Self-Evaluation and QA	Study program	Teaching and learning	Faculty and Human Resources <sup>2</sup>	Research <sup>3</sup>	Students <sup>4</sup>		Infrastructure
							B.Pharm program	Clinical Pharmacy programs	
Hebrew University	Orange	Red	Orange	Orange	Orange	Blue	Orange	Green	Green
Ben-Gurion University	Red	Orange	Orange	Yellow	Orange	White	Yellow	Orange	Green

1 = This grading is linked to the lack of autonomy of decision making for the appointment of faculty staff etc.

2 = This grading is linked to the lack of clinical pharmacists in the tenured faculty and also the lack of administrative support at both HUJI and BGU.

3 = Research was not graded at BGU as research is not undertaken by staff in their role as member of the School of Pharmacy but as member of the Faculty of Health Sciences.

4 = This grading is provided separately for the preparedness for practice of the B.Pharm/B.Sc Pharm students and is **not** reflective of the MSc or PhD programs in pharmaceutical sciences. The MSc in Clinical Pharmacy and Regulatory Affairs at BGU was graded as 'needs much improvement' (orange) as training program for clinical pharmacists.

Not acceptable. Not satisfactory	Red	Clearly fails to meet the acceptable threshold level of performance.
Needs much improvement	Orange	Is below acceptable threshold level of performance.
Room for improvement	Yellow	Meets the acceptable threshold level of performance.
Satisfactory	Green	Clearly meets the expected threshold level of performance.
Excellent	Blue	Exceeds the expected threshold level of performance.



Signed by:



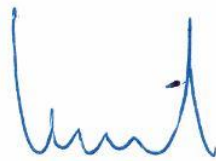
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Prof. Cate Whittlesea



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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