



نقابة صيادلة لبنان  
ORDER OF PHARMACISTS OF LEBANON

# OPL DELIVERABLES

December 2015 - November 2018

**SUMMARY OF A MANDATE**

## FOREWORD



Dear colleagues,

In an ever-changing profession, we have faced and still are facing many challenges. Our aim was to modernize the pharmacy practice, to reach a point where the **pharmacist would be recognized as the “drug expert”**.

Based on institutional, epidemiological, and international literature research, we developed projects and started implementing it in collaboration with main stakeholders, mainly the Ministry of Public Health, the Ministry of Education and Higher Education, and academia.

All these projects are completed and ready to be implemented. If properly applied, it would take the profession in Lebanon to a higher level.

Hoping to continue working together for **excellence in patient care**.

**Georges M. SILI**

President,

Lebanese Order of Pharmacists

A handwritten signature in blue ink that reads "Georges M. Sili". The signature is written in a cursive style.

## PREAMBLE



Dear colleagues,

It is a pleasure to present a summary of our work which ended up with concrete publications and deliverables.

During these 3 years, I had the privilege to work with numerous committee members on various projects, to achieve our mission of **delivering high-level scientific and educational activities** to all pharmacists, **enabling data generation and research** to back-up managerial and professional decisions, and **developing excellence in pharmacy practice** through building knowledge, expertise, and skills of the workforce to achieve optimal health outcomes and meet the growing challenges of the profession.

At the end of this term, I cannot but thank all the members for the efforts exerted to conclude all these projects. This would have not been possible without their enthusiasm and dedication.

Finally, I would like to express my gratitude to all the pharmacists who contributed actively to the research by filling out the surveys. I hope our collaboration will continue for a better profession.

**Pascale SALAMEH**

Chair, Scientific Committee  
Lebanese Order of Pharmacists



# THE SCIENTIFIC COMMITTEE



*\* Reports to the President of the OPL*

For details and names of all members:

[http://opl.org.lb/newdesign/scientific\\_committee.php](http://opl.org.lb/newdesign/scientific_committee.php)

## TABLE OF CONTENTS

	OPL Deliverables and Publications	<b>1</b>
	Institutional Research	<b>8</b>
	Platforms, Laws and Decrees	<b>17</b>
	Competencies, Training and Specialties	<b>25</b>
	Schools of Pharmacy Accreditation	<b>30</b>
	Good Pharmacy Practice in Community Pharmacy	<b>34</b>
	Medication Safety Publications	<b>38</b>
	Patient-Related and Clinical Research	<b>42</b>
	Continuing Education Publications	<b>46</b>

# OPL DELIVERABLES AND PUBLICATIONS

## 1. Introduction

The OPL team was keen to document and record all its activities by publishing research papers and white papers.

A white paper is a concise persuasive report used to convey an organization's philosophy. This type of document contains proposals for the specific policy area and may constitute the draft of a law to go for approval by the parliament.

A scientific paper is a written report describing original research results. It is usually published in peer-reviewed journals, peer review being the critical assessment of manuscripts submitted to journals by experts who are not part of the editorial staff. It is a vital part of the quality control mechanism that is used to determine whether an article is suitable for publication or not.

Thus, publishing in peer-reviewed journals put the OPL on the map of knowledge productive institutions, and gave its research more impact, credibility and visibility. It also helped authorities to take decisions that were beneficial to the profession, such as the 750 LBP famous decision.

It also served for evidence-based decision making and yielded projects of practical value, such as the accreditation standards for pharmacy programs and for community pharmacists.

Working on those documents clarified challenges, consolidated strategic governance, and reinforced quality management: it was like going where there was no path and leaving a trail.

# OPL DELIVERABLES AND PUBLICATIONS

## 2. Published and accepted articles

1. Hallit S, Zeenny RM, Sili G, Salameh P. Situation analysis of community pharmacy owners in Lebanon. Pharm Pract (Granada). 2017; 15(1):853. See:  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5386620/>
2. Iskandar K, Hallit S, Bou Raad E, Droubi F, Layoun N, Salameh P. Community pharmacy in Lebanon: A societal perspective. Pharmacy Practice 2017 Apr-Jun;15(2):893. See:  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5499345/>
3. Hajj, A., Hallit, S., Ramia, E., Salameh, P., & Order of Pharmacists Scientific Committee – Medication Safety Subcommittee. Medication safety knowledge, attitudes and practices among community pharmacists in Lebanon. Current Medical Research and Opinion, 2017: 1-8. See:  
<https://www.tandfonline.com/doi/abs/10.1080/03007995.2017.1361916?journalCode=icmo20>
4. Ramia, E., Zeenny, R. M., Hallit, S., & Salameh, P., & Order of Pharmacists Scientific Committee – Medication Safety Subcommittee. Assessment of patients' knowledge and practices regarding their medication use and risks in Lebanon. International Journal of Clinical Pharmacy, 2017:1-11. See:  
<https://link.springer.com/article/10.1007%2Fs11096-017-0517-4>

5. Iskandar K, Bou Raad E, Hallit S, Chamoun N, Usta U, Akiki Y, Karaoui LR, Salameh P, Zeenny RM. Assessing the perceptions of Pharmacists working in Lebanese Hospitals on the Continuing Education Preferences. *Pharmacy Practice* 2018. See:  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6041213/>
6. Domiati S, Sacre H, Lahoud N, Sili G, Salameh P. Knowledge of and readiness for medication therapy management among community pharmacists in Lebanon. *International Journal of Clinical Pharmacy* 2018: 1-10. See:  
<https://link.springer.com/article/10.1007%2Fs11096-018-0666-0>
7. Hajj A, Hallit S, AzzoC, Abdou F, Naaman N, Akel M, Sacre H, Salameh P, Rabbaa L. Assessment of Knowledge, Attitude and Practice among Community Pharmacists towards Dental Care: A National Cross-Sectional Lebanese Survey. *Accepted in the Saudi Pharmaceutical Journal, 2018.*
8. Hallit S, Hajj A, Shuhaiber P, Iskandar K, Ramia E, Sacre H, Salameh P. Medication Safety Knowledge, Attitude, And Perception Among Hospital Pharmacists in Lebanon. *Accepted in the Journal of Evaluation in the Clinical Practice, 2018.*

# OPL DELIVERABLES AND PUBLICATIONS

## 3. Articles submitted to publication

1. Sacre H, Tawil S, Sili G, Salameh P. Continuing Education for Pharmacists in Lebanon: Current Issues and Challenges.
2. Zeidan RK, Hallit S, Zeenny R, Salameh P. Lebanese Community Pharmacists Interest in and Attitude to Pharmacy Practice Research.
3. Tawil S, Sacre H, Sili G, Salameh P. Patients' Perceptions Regarding Pharmacists' Healthcare Services.
4. Lahoud N, Abdo R, Akel M, Safwan J, Henaine AM, Shdeed R, Zeenny R, Fahs I, Hajj H, Salameh P. Knowledge, attitudes and behaviors towards antibiotics use among Lebanese adults: An awareness survey on antibiotic resistance.
5. Ramia E, Zeenny R, Hajj A, Hallit S, Lahoud N, Zeitoun A, Saab M, Hajj H, Shuhaiber P, Sacre H, Akel M, Salameh P. Medication Safety Spontaneous Reporting System: The Lebanese Order of Pharmacists Initiative.
6. Ramia E, Zeenny R, Hallit S, Salameh P. Assessing self-reported Adverse Drug Reactions among Lebanese outpatients: A national Cross sectional study.
7. Chamoun N, Usta U, Karaoui L, Salameh P, Hallit S, Shuhaiber P, Henaine AM, Akiki Y, Zeenny RM, Iskandar K. Current Trends in Hospital Pharmacy Practice in Lebanon
8. Hallit S, Sacre H, Sili G, Salameh P. Is pharmacy profession declining in Lebanon? Projections till the year 2050.
9. Hallit S, Sacre H, Salameh P. Role of a professional organization in promoting and conducting research.

10. Henaine AM, Lahoud N, Abdo R, Chdeed R, Safwan J, Akel M, Fahs I, Zeenny R, Sacre H, Salameh P. Knowledge towards antibiotics use among Lebanese adults: A study on the influence of sociodemographic factors.
11. Hallit S, Sacre H, Sili G, Salameh P. Pharmacy Profession in Lebanon: Challenges and governance solutions.
12. Sacre H, Hallit S, Hajj A, Tawil S, Sili G, Salameh P. Computer literacy and practice related to CE among pharmacists
13. Tawil S, Hallit S, Hajj A, Sacre H, Sili G, Salameh P. Correlates of motivation and value to Continuing Education among Lebanese Pharmacists.
14. Hallit S, Sacre H, Tawil S, Sili G, Salameh P. Validation of the computer literacy scale among Lebanese pharmacists.
15. Hajj A, Hallit S, Sacre H, Sili G, Salameh P. Community pharmacists' empathy towards patients: the case of Lebanon.
16. Badro D, Hallit S, Sacre H, Saade S, Sili G, Salameh P. Good Pharmacy Practice indicators among community pharmacies in Lebanon: a field assessment survey.
17. Hallit S, Zeidan RK, Saade S, Hajj A, Akel M, Hallit R, Yahchouchy C, Kheir N, Iskandar K, Salameh P. Knowledge attitude and Practice of Community Pharmacists towards Chronic Bronchitis and Obstructive Pulmonary Disease.

# OPL DELIVERABLES AND PUBLICATIONS

## 4. White papers

1. Interuniversity Diploma Curriculum on Medication Therapy Management, January 2017
2. Prescription guidelines for pharmacists and physicians, May 2017
3. Post graduate training policy, procedures and activities. February 2018
4. Competencies and titles for specialized pharmacists, September 2018
5. Core competencies for Pharmacists in Lebanon: entry level minimum requirements, November 2018
6. Standards for Pharmacy Programs Accreditation in Lebanon, November 2018
7. Indicators and guidance for Accreditation Standards of Pharmacy Programs in Lebanon, November 2018
8. Good Pharmacy Practice Standards in Community Pharmacies. November 2018.

# OPL DELIVERABLES AND PUBLICATIONS

## 5. Educational material

1. Antibiotic misuse poster. Nov 2017
2. Continuing Education poster. Nov 2017
3. Cross functional role of a manager. Nov 2017
4. Medication safety poster. Nov 2017
5. Oral health poster. Nov 2017
6. 7-Star Pharmacist flyer. Nov 2017
7. Antibiotic resistance flyer. Nov 2017
8. Blood donation flyer. Nov 2017
9. Soft skills flyer. Nov 2017
10. Patient Profile and MTM flyer. Nov 2017
11. Medication safety flyer. Nov 2017
12. Oral health booklet. Nov 2017
13. Health Promotion Counseling Tips booklet. Nov 2018

All these documents are available through OPL e-Library:  
<http://www.oplelibrary.com/libraryDocs>

# INSTITUTIONAL RESEARCH

## 1. Role of a professional organization in promoting and conducting research

Creating and disseminating new knowledge to guide patient pharmacotherapy and optimize medication use are key elements of the profession, as stated by international instances.

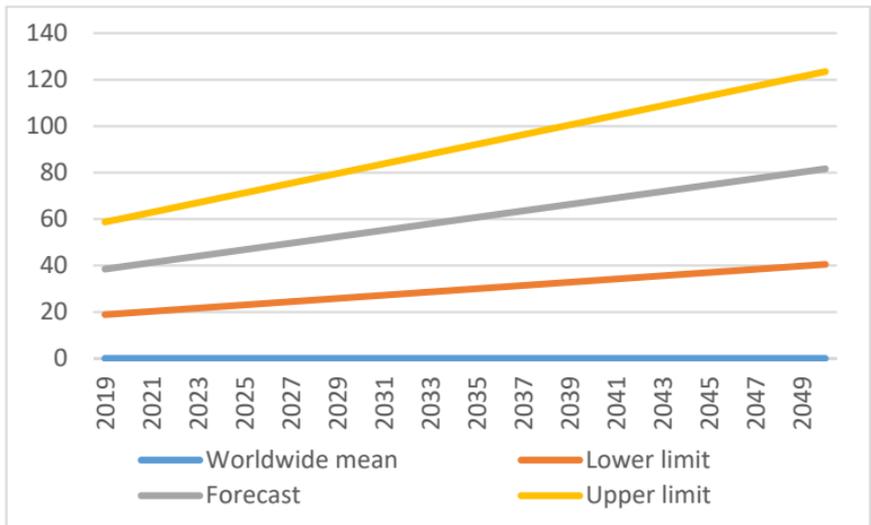
The OPL mission is to enable the development of excellence in the pharmacy practice through building knowledge expertise and skills of the workforce to achieve optimal health outcomes, in addition to ensuring the good management of the institution through governance. To achieve these goals, evidence-based decisions which stem from research, are crucial.

**Consequently, the OPL generated information about several aspects of the professional practice in Lebanon, mainly data to improve institutional management, and scientific information related to pharmacists and patients in real life.**

# INSTITUTIONAL RESEARCH

## 2. Projections of the number of pharmacists

There is an oversupply of pharmacy graduates in Lebanon, almost the triple of the worldwide mean per population; projections show that these numbers will continue to rise, even if no new school of pharmacy is approved by the government.



*Forecast of the ratio of pharmacists per 10,000 inhabitants in Lebanon*

**To curb this dramatic increase of pharmacy graduates, the OPL submitted new laws and raised awareness among all stakeholders, in addition to initiating a collaborative work of pharmacy programs accreditation with relevant authorities and academia.**

# INSTITUTIONAL RESEARCH

## 3. Actuarial study

Due to the criticality of the situation, the Lebanese Order of Pharmacists consulted an actuarial company to study the status of the retirement fund and assess the impact of the dramatic medications prices decline along with the exponential increase in the pharmacists' numbers adhering yearly to the OPL. The goal is to suggest viable options and solutions to avoid further negative impact on the retirement fund.

After various simulation studies, taking into consideration various sectors of pharmacists' activity that directly affect their contribution to the fund, the study showed a clear underfunding of the retirement system. A steep gap will start to show in the near future, based on the current trends and different scenarios of market labor, staff salaries, medication costs, and funding input regulations. This underfunding may impose an unfair burden on future generations if it is not fixed with saving, and thus will become an ethical issue among pharmacists.

The study highlighted the need to implement drastic changes in the coming years to save the Lebanese pharmacists' retirement fund and keep it sustainable. Along the same lines, the funding rules have to be changed. Failure to implement the recommended changes will jeopardize the fund, the OPL structure, and eventually, the profession.

**The suggested solutions provided through the study results would definitely improve the situation, with a condition to be appropriately implemented within a reasonable period.**

# INSTITUTIONAL RESEARCH

## 4. Financial situation analysis

To evaluate the current community pharmacists' interventions and job satisfaction, secondary to the alteration in the financial rewards, the OPL conducted a cross-sectional study, using a proportionate random sample of Lebanese community pharmacy owners from all districts of Lebanon. The study results showed that the monthly sales and profit decreased significantly in the last decade as well as the number of loyal customers. The rent, the total salaries of assistant pharmacists and employees, income taxes, municipality fees, the total bills (electricity, water, cleaning, security) and the disposal of expired products per year significantly increased during the last 10 years. Most of the owners (95%) said they cannot afford to hire more pharmacists while 45% said they cannot afford buying software for their pharmacies. Finally, 89% of these owners admitted that their situation was better 10 years ago compared to nowadays. Most Lebanese community pharmacists are not financially satisfied; their financial situation deteriorated in the last decade.

**The OPL worked to solve this problem with the Ministry of Public Health and achieved the rise of 0.5 US\$ (750 LBP) per box medication which public price is under 25,000 LBP. Other means are being explored.**

# INSTITUTIONAL RESEARCH

## 5. Societal perspective

To assess patients' attitudes and their negative or positive reactions towards the role of, and the services provided by the community pharmacist's in Lebanon, a cross-sectional study, was conducted between January and April 2016. Public perception and attitude toward community pharmacist in Lebanon was found to be poor despite highly qualified pharmacists. Aspects of pharmacy services most relevant to patients were respect, empathy, a friendly staff, listening carefully, giving quality time, responding quickly to their needs and respecting their privacy. The pharmacist should be working on the different issues patients are complaining from, in order to play a more important role in the society and become the number one trusted health care professional.

**This study encouraged us to find ways to improve pharmacy services in the community such as developing the Lebanese Advanced Patient Profile and MTM platform, in addition to offering soft skills sessions to pharmacists.**

# INSTITUTIONAL RESEARCH

## 6. Medication Therapy Management (MTM) readiness

The OPL is wishing to implement the medication therapy management in community pharmacies, to align with international standards. For this purpose, a cross-sectional observational descriptive study was conducted to evaluate community pharmacists' knowledge of and readiness for medication therapy management among pharmacists from all Lebanese regions. While only 376 (46%) of the interviewed pharmacists declared to be familiar with this concept, the majority 646 (78.8%) agreed on the importance of patient-centered care. Although this service will not be remunerated at this stage, 529 (64.5%) were willing to attend advanced training sessions to become actively engaged in medication therapy management, particularly those who had adequate workflow, staff and time at their workplace and those agreeing to review a patient's medication profile and provide interventions as part of their role. Efforts are exerted by the OPL to extend the role of the pharmacist and its positive effect on patient outcome.

# INSTITUTIONAL RESEARCH

## 7. Community pharmacies versus primary health care

In Lebanon, patients' perception regarding the role of community pharmacists remains largely unknown. The objective of the OPL was to assess patients' perception of services provided in community pharmacies in comparison to those provided in primary health care centers (dispensaries), as well as identifying potential areas for improvement. A cross-sectional survey was conducted from June till November 2017. While 85% of the patients thought that community pharmacists were responsible for their health security and medication safety, 30% of the respondents considered that the only role of community pharmacists is dispensing medications and only 33.4% found the dispensaries' services trustworthy. The majority (65%) agreed that the working personnel at the dispensaries does not have appropriate qualifications. Community pharmacists should continue to reach out to patients, assess their hesitations and promptly offer solutions and the dispensaries should abide by the laws and have a pharmacist supervising the dispensing of medications.

# INSTITUTIONAL RESEARCH

## 8. Interest of community pharmacists in research

To assess the knowledge, attitude and factors associated with the interest of Lebanese community-based pharmacists in participating in research, a cross-sectional survey, conducted between January and May 2017, enrolled 399 community pharmacists from the five districts of Lebanon. 231 (72%) were conscious about the important role of research in the community pharmacy setting whereas only 5.6% considered it not important. Over two-thirds (68.5%) of the pharmacists declared being interested in participating in research. The most reported barrier was lack of time during hours of work (90.9%), followed by the lack of pharmacy staff (73.7%), lack of financial resources (68.9%), patient's lack of education and resistance to participation (64.8%), and lack of support (63.8%). Lebanese Pharmacists have the good will to conduct and participate in research, but are lacking knowledge; this issue needs to be addressed vividly. Focusing on the barriers that were identified in this study, can potentially improve the research output of Lebanese community pharmacists.

# INSTITUTIONAL RESEARCH

## 9. Hospital pharmacy situation

The role of hospital pharmacists is instrumental in elevating pharmacy practice worldwide. A national survey was conducted to evaluate hospital pharmacy practice in Lebanon. The results of our survey showed that teaching hospitals were more compliant with the International Statements of Hospital Pharmacy Practice compared to non-teaching hospitals. There is a room for improvement, especially if the application of the accreditation standards for safe hospital pharmacy practice becomes mandatory for all hospitals, which is expected to standardize pharmacy practice and secure both medication and patient safety.

**The hospital pharmacy subcommittee developed a tailored CE program that tackled hospital accreditation standards to help hospital pharmacists getting through this endeavor.**

# PLATFORMS, LAWS AND DECREES

## 1. Introduction

The OPL seeks to raise the level of the profession, strives to enforce the laws and defend the rights of pharmacists and improve the level of practice and development of scientific competence. The Order also aims at providing the conditions for enhancing the patient's access to the appropriate medications and its safe use. This would enable the pharmacist to provide the best medical services to the patient and work to protect and maintain his health and quality of life.

To achieve these goals, the OPL is working jointly with all the stakeholders such as the Ministry of Public Health (MOPH), the Ministry of Education and Higher Education (MEHE), the universities and the professional associations.

Lebanese pharmacists are abiding by the laws and regulations related to pharmacy practice, although some are outdated. The OPL is aiming at modernizing the profession through its projects, laws and decrees suggestions, and agreements with different parties.

**All the services suggested by the OPL are intended to be remunerated at a later stage based on international models of pharmacists' fees.**

# PLATFORMS, LAWS AND DECREES

## 2. Lebanese Advanced Patient Profile (LAPP) platform

The OPL developed an electronic platform to be used by physicians and pharmacists. This platform will be used to apply the unified prescription and create an advanced electronic patient profile, the Lebanese advanced Patient Profile (LAPP). This profile will serve to manage patients' medication and therapy, using the principle of Medication Therapy Management (MTM) and Medication Utilization Review (MUR). It will also facilitate the linking the patients with third-party payers. It is also linked to a drug-drug interaction database. Patient educational videos might be added at a later stage.

This platform is available on the following link:

<http://lapphealth.com/Pharmacist/>

**A memorandum of understanding is being prepared to be signed with the Ministry of Public Health and other third party payers regarding this matter.**

# PLATFORMS, LAWS AND DECREES

## 3. Medication safety platform

Based on studies related to the medication safety culture in Lebanon, the OPL prepared the Medication Safety electronic platform, to be used by pharmacists and other health professionals for reporting Adverse Drug Events. This platform is available on the following link:

<http://opl.org.lb/medicationsafety>

The OPL team met with the Ministry of Public Health representatives and started negotiating the integration of the platform within the National Pharmacovigilance System that is being implemented in Lebanon.

**Through this project, the OPL is aiming at improving the patient safety culture, in addition to putting Lebanon on the international pharmacovigilance (PV) map.**

# PLATFORMS, LAWS AND DECREES

## 4. Drug shortage platform

Drug shortage is a widespread problem worldwide with multiple stakeholders involved including the patient, healthcare professionals, hospitals, community pharmacies, pharmaceutical industry and regulatory affairs. There are several causes for drug shortages in Lebanon which may be: external due to the manufacturer related quality issues, manufacturing and supply chain issues... Internal causes can be due to poor inventory ordering practices, stockpiling before price increases, and hoarding caused by rumors of an impending shortage.

It can also be due to drug repricing and the absence of a strategic plan to manage the crisis pro-actively in addition to the lack of collaboration between the OPL and the MOPH in matters of drug shortage. There is currently no law or unit that can intervene on national level and every stakeholder is trying to solve this issue independently.

**The OPL developed an electronic platform for drug shortage that is being presented to the MOPH for approval and use.**

## PLATFORMS, LAWS AND DECREES

### 5. Suggested new laws and decrees

**Clinical and hospital pharmacy laws:** In parallel to specialties titles and qualifications, previous suggestions of laws for clinical and hospital pharmacists were modified and re-presented to the parliament to be discussed and adopted. These laws will consolidate the status of the hospital and clinical pharmacists in Lebanon, and increase opportunities for specialized pharmacists on labor market.

**Pharmacy studies organization decree:** A decree to organize the pharmacy studies was suggested to the Ministry of Education and Higher Education (MEHE). It included: minimal number of required credits, teaching and learning requirements, quality and accreditation requirements, alignment to core competencies, specializations and titles in pharmacy areas, and finally colloquium improvement.

***Numerus clausus* exam structure decree:** Given the increasing number of pharmacists in Lebanon, several suggestions were presented to the MEHE. A national examination structure for accepting students in current pharmacy programs, based on a *numerus clausus* to be yearly prepared by the OPL. This suggestion was however not taken into consideration due to legal difficulties.

**The Lebanese Advanced Patient Profile law:** To create a full e-profile to patients, apply unified prescription, MTM, and MUR.

# PLATFORMS, LAWS AND DECREES

## 6. Suggested laws amendments

### **Law of 1950 on establishing the OPL**

Article 3: registration of new pharmacists to include the post-graduate training

Article 4: application to register to the OPL to include the status of post-graduate pharmacist

Article 12: number of board members to be increased

### **Retirement Fund law 56/66 of 1966**

Article 3: measures to replete the retirement fund based on the actuarial study conducted by an actuarial firm

### **Law 367/94 of 1994 governing the practice of the pharmacy profession in Lebanon**

Article 15: forbidden activities to include practicing in primary health care centers (dispensaries) as an additional activity

Article 43: rules for dispensing medications

Article 46: prescription guidelines

Article 47: prescribing of generic medications to be based on a scientific classification (equivalent to the Orange book)

Article 80: pricing of medications to require the OPL mandatory opinion instead of the current advisory one

Article 85: define new roles and add to the prerogatives of OPL inspectors in collaboration with the MOPH

Add a new section: the legal immunity for pharmacists

# PLATFORMS, LAWS AND DECREES

## 7. Health reform suggestions

PRINCIPLES	STRATEGIC GOALS	EXECUTIVE PROJECTS
<b>Laws and Order</b>	Leadership of MOPH Legal framework improvement Clearer boundaries between health professions Laws enforcement	Change/suggest laws and regulations in every sector Establish professional competency framework Improve inspection and apply accountability measures
<b>Strategic Thinking</b>	Use SWOT analysis Evidence-based decisions	Conduct expert focus groups Carry out assessment studies
<b>Quality Practice</b>	Implement Good Practice to promote patient-centered care Manage risks	Apply Accreditation standards Apply ISO standards Professional Practice Evaluation Prepare risk management plans
<b>Ethical Behaviors</b>	Professionalism (human rights, secrecy, respect) Independence in the practice Humanized communication with patients	Conduct workshops for soft skills Circulate documents about ethics and deontology Apply accountability measures

<b>PRINCIPLES</b>	<b>STRATEGIC GOALS</b>	<b>EXECUTIVE PROJECTS</b>
<b>Collaborative Spirit</b>	Inter-professional practice Public/private collaboration	Conduct inter-professional practice workshops Initiate collaboration projects between public and private sectors
<b>Resources Stewardship</b>	Protect human resources Protect financial resources Health promotion	Plan human resources needs Promote prevention versus cure Cost-effectiveness studies Health outcomes studies Diagnosis-Related Group: DRG system trial and application
<b>Technical Improvement</b>	Standardize measurements Promote applied research Adapt treatment to context	Central laboratory activation Useful data generation Guidelines adaptation and adherence
<b>Educational Perspective</b>	Link education to practice Maintain adequate competency	Basic competencies framework Specialties and titles clarification Mandatory post-graduate continuing education
<b>Governance</b>	Health Related Equity Transparency Innovation Sustainability	Work for "Health for All", "SDG: Sustainable Development Goals" Use IT for tracking activities Try new ideas based on professionals' consensus

# COMPETENCIES, TRAINING AND SPECIALTIES

## 1. The Lebanese pharmacy core competencies

The OPL is eager to implement a competency framework for pharmacists at entry level. These core competencies include:

**Fundamental knowledge:** Patient care, Pharmaceutical, Social, behavioral and administrative courses.

**Professional Practice:** Implements professional requirements to training settings, demonstrates awareness of codes of ethics, understanding of the Lebanese pharmacy law, a patient-focused approach to practice, applies principles of continuing professional development and acts as a team member in all aspects of practice.

**Personal Skills:** Demonstrates leadership, decision-making, and communication skills in addition to computer literacy.

**Supply of medicines:** Ensures the quality, safety and integrity of products, from the manufacturing plant to the dispensing setting.

**Safe and Rational Use of Medicines:** Counsels patients and promotes the best patient care, while monitoring the therapeutic outcomes, and prioritizing medication safety.

**Pharmaceutical Public Health Competencies:** Engages in health promotion activities with the patient and through public health activities.

**Organization and Management Competencies:** Demonstrates personal organizational and management skills at the workplace.

# COMPETENCIES, TRAINING AND SPECIALTIES

## 2. Training conditions and related competencies

The OPL developed the minimum training conditions, including the duration of the rotation, extent, timing, and types of institution. It also defined the qualifications of the pharmacist who accepts trainees, in addition to the activities that may be conducted in every training site. Competencies related to pre-graduate training were developed and linked to core competencies.

**Competencies were discussed with academia representatives and it is being officially adopted to be taught during pharmacy studies.**

# COMPETENCIES, TRAINING AND SPECIALTIES

## 3. Post-graduate training guide

The OPL board took the decision to apply a post-graduate training to newly registered pharmacists: The student who is currently enrolled in the university and who will be registered at the OPL in 2019, must take a 9-month post-graduate training or enroll in a PharmD program, before applying to the OPL.

The duration of the post-graduate training can be replaced by a post-graduate diploma: an additional year of specialization related to pharmacy and that will provide the pharmacists with experience in the field of his prospective work, such as research or professional Master degree.

For students willing to enroll in a first-year pharmacy program at the university for the academic year 2018-2019, a post-graduate training of 20 months is required at the end of the 5th year.

The period can be replaced by specialized studies, that would be recorded in the OPL to determine the duration of the exemption. This decision applies to students from Lebanese universities and from abroad.

**This decision was submitted to the parliament to be voted as a law. A training guide was also developed for post-graduate trainees, in addition to an Inter-University Diploma program in Medication Therapy Management that could be applied at a later stage, in collaboration with academia.**

# COMPETENCIES, TRAINING AND SPECIALTIES

## 4. Advanced specialized titles

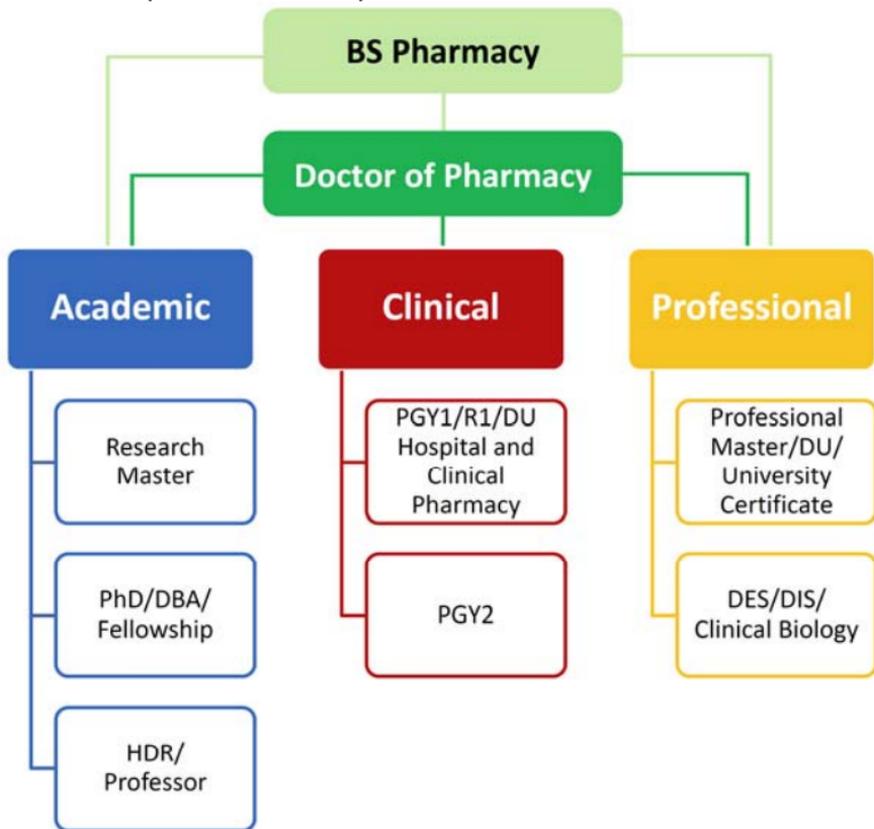
The OPL worked in collaboration with academia and submitted to the MOPH the specialization titles for pharmacists.

Title	Specialty/Level	Degree	Minimal Number of Years
Pharmacist/ Pharmacien/ صيدلي	None - Entry Level	BS Pharmacy*	5 years currently (equivalent to a minimum of 160 US credits or 300 ECTS)
Doctor of Pharmacy/ Docteur en Pharmacie/ دكتور في الصيدلة	None - Entry Level	PharmD/Doctorat d'Exercice**	6 years or its equivalent (200 US credits or 360 ECTS)
Advanced Pharmacist/ Pharmacien Avancé/ صيدلي متقدم في...	Public Health Sciences Business Industrial Pharmacy Other	Master (Research or Professional) or University Diploma (DU)/Certificate	Minimum of 1 year post-PharmD (equivalent to a minimum of 36 US credits or 60 ECTS)
Clinical Pharmacist/ Pharmacien Clinicien/ صيدلي اكلينيكي	Hospital or Clinical Residency	PGY1/R1/DU de pharmacie clinique et hospitalière	Minimum of 1 year post-PharmD
Specialized Clinical Pharmacist/Pharmacien Clinicien Spécialisé/ صيدلي اكلينيكي متخصص	Specialized Clinical Residency	PGY2	Minimum of 2 years post-PharmD
Specialized Pharmacist/ Pharmacien Spécialiste/ صيدلي اختصاصي في...	Public Health Sciences Business Industrial Pharmacy Clinical Pharmacy...	PhD/DBA/ Fellowship	Minimum of 4 years post-pharmacy (1+3)
Hospital Pharmacist/ Pharmacien Hospitalier/ صيدلي اختصاصي في صيدلة المستشفى	Hospital Pharmacy	DES/DIS	Minimum of 3 years post-pharmacy
Industrial Pharmacist/ Pharmacien Industriel/ صيدلي اختصاصي في الصناعة الدوائية	Industrial Pharmacy	DES/DIS	Minimum of 3 years post-pharmacy
Clinical Biologist/ Biologiste Médical/ صيدلي اختصاصي في العلوم المخبرية السريرية	Medical Laboratory	DES/DIS	Minimum of 4 years post-pharmacy
Research Pharmacist/ Pharmacien Chercheur/ صيدلي اختصاصي في الأبحاث	Public Health Sciences Business Industrial Pharmacy Other	HDR or Academic Professor Rank	Minimum of 3 years post-PhD or post-DBA

# COMPETENCIES, TRAINING AND SPECIALTIES

## 5. Advanced specialized competencies

In parallel with specialization titles, the OPL adopted advanced competencies developed by academics and specialists in several fields of expertise, in both professional and academic areas.



### Notes:

1. Clinical and Professional tracks' pharmacists may join the academic track when this meets the academic institution's rules and regulations.
2. All degrees should be from recognized universities/institutions

# SCHOOLS OF PHARMACY ACCREDITATION

## 1. The Need for Pharmacy Programs' Accreditation

Pharmacy is a constantly-evolving profession. To keep up the pace of change, the World Health Organization (WHO) introduced the concept of the "Seven-star pharmacist" in 1997, which covered these roles: Caregiver, decision-maker, communicator, manager, life-long learner, teacher, and leader. Two more roles were added later; the "researcher" and "the entrepreneur" (leading to a nine-star pharmacist).

On another hand, Lebanon suffers from an oversupply of pharmacy graduates, leading to unethical competition between pharmacists in a financially difficult context and very demanding patients.

**Consequently, the OPL is now leading the project of the accreditation of the schools of pharmacy, in collaboration with academia and the Ministry of Education and Higher Education. The project is ongoing and the first accreditation round is expected to start in 2019.**

# SCHOOLS OF PHARMACY ACCREDITATION

## 2. The Lebanese Schools' of Pharmacy Standards

After taking into account current international (FIP & WHO, ACPE, Canadian, CIDPHARMEF) and Lebanese higher education (Association of Universities; TLQAA project) standards, official standards for pharmacy education in Lebanon were adopted. They encompass standards related to the following areas: mission, vision and goals, planning and assessment, organization, governance and management, teaching and learning, students and academic policies, research, human resources, general resources and facilities, public disclosure and integrity.

The standards were complemented by a step-by-step guide for self-assessment by school members, a template for the self-assessment report, a glossary, and a set of quantitative indicators. An official process for the whole system was also adopted by the Pharmacy Programs Accreditation Commission.

This will allow the improvement of pharmacists' competencies, pharmacy services in parallel to curbing graduates' supply.

# SCHOOLS OF PHARMACY ACCREDITATION

## 3. Auditors' qualifications and ethical rules

The OPL suggested rules for the selection of evaluation panels' members, as a part of the set of regulations and documentation that have to be elaborated to guarantee the fairness, the transparency and the consistency of all evaluation processes decided by the accreditation commission.

These rules were completed by:

- The ethics of evaluation (impartial, objective and independent expertise)
- Auditors' knowledge of the training materials
- Auditors' knowledge on the Lebanese higher education system
- The working relationship between the panels and the commission

# SCHOOLS OF PHARMACY ACCREDITATION

## 4. Suggestion of a decree to organize pharmacy studies

A decree to organize pharmacy studies was suggested by the OPL, based on the current laws of higher education. It included the following:

- Minimal duration of pharmacy studies
- Required number of credits,
- Structure of the school,
- Building characteristics,
- Equipment and other resources,
- Academic instructors and professors,
- Administrative staff,
- Quality management system,
- Pre- and post-graduate training conditions,
- Training sites characteristics,
- Titles and qualifications for specialized pharmacists.

# GOOD PHARMACY PRACTICE IN COMMUNITY PHARMACY

## 1. The need for Good Pharmacy Practice Standards (GPP)

As the pharmacist's role is changing from compounding and dispensing to providing drug information and patient care, the OPL decided to go together with these changes, by empowering the pharmacist in Lebanon to offer such modern services.

The entire scope of patient-centered services has been described as pharmaceutical care, a revolutionary approach in the pharmacy practice. All pharmacists have to ensure that the service they provide to every patient is of appropriate quality.

The principles of pharmaceutical care are described in the concept of Good Pharmacy Practice (GPP), a means of meeting and clarifying these obligations. The GPP standards suggested by the OPL are inspired by the ones published by international organizations, namely the FIP & WHO, and some American, European and regional countries.

**The GPP document was submitted to the MOPH for further discussion and approval. In parallel, an ongoing field assessment is conducted in collaboration with the American University of Science and Technology (AUST).**

# GOOD PHARMACY PRACTICE IN COMMUNITY PHARMACY

## 2. Standards of Good Pharmacy Practice

The OPL developed a GPP guide based on the international standards from the FIP & WHO, and some American, European and regional countries.

The standards pertained to the following areas: Settings of a Pharmacy, Handling of Stock, Extemporaneous compounding, Provision of Medicines, Supply of Non Prescription Medicines, Interaction and Communication, Documentation Systems, Equipment, References, Health Promotion, Diagnostics, Pharmacotherapy Monitoring, Research and Professional Development, Trainees, Para-pharmaceuticals.

**This guide was submitted to the MOPH for approval and implementation.**

# GOOD PHARMACY PRACTICE IN COMMUNITY PHARMACY

## 3. Prescriptions guidelines summary

The OPL adopted the WHO prescription's timeline (table), in addition to developing prescription guidelines for both the physician and the pharmacist.

The guidelines for pharmacists included the basic legal and medical information required in a prescription along with common abbreviations, dispensing guidelines for the pharmacist, elements for good practice, special considerations, and decision flowchart for medication substitution. For physicians, precautions when writing a prescription and general remarks were also added.

<b>Physician</b>	<b>STEP 1:</b> Define the patient's problem <b>STEP 2:</b> Specify the therapeutic objective <b>STEP 3:</b> Verify the suitability of the prescription drug <b>STEP 4:</b> Write the prescription
<b>Pharmacist</b>	<b>STEP 5:</b> Give information, instructions and warnings <b>STEP 6:</b> Monitor the treatment (and stop, if necessary, in collaboration with the physician)

# GOOD PHARMACY PRACTICE IN COMMUNITY PHARMACY

## 4. OPL web-guide for pharmacists

The OPL developed a web-guide to help pharmacists using all the electronic platforms available. It included illustrated guidance for using the Continuing Education online courses (SWANK system and library), the Medication Safety platform for medication-related adverse events reporting, and the Lebanese Advanced Patient Profile (LAPP).

The guide is available online:

<http://opl.org.lb/oplwebguide>

# MEDICATION SAFETY PUBLICATIONS

## 1. Medication safety story

The increase in use and expansion of the pharmaceutical industry has brought with it an increase in hazards, errors and adverse events associated with medication use. In Lebanon, medication safety reporting by pharmacists is not being performed. The objective of the OPL was to engage pharmacists in such an endeavor. It conducted three cross-sectional surveys to assess knowledge, attitude and practices (KAP) of community pharmacists, hospital pharmacists and the general population regarding medication safety and adverse drug events reporting. Afterwards, an electronic platform was created, and several training sessions were offered to professionals who would be involved in helping community or hospital pharmacists in launching the platform.

This project has important implications in terms of public health, since knowledge and attitudes are viewed as potentially modifiable factors and their improvement is expected to decrease underreporting.

**Pilot testing is ongoing, in addition to negotiations with the Ministry of Public Health to include this platform in their PV system. Regular continuing education sessions and sensitization campaigns are planned regarding this topic, in parallel to the official launching of the project.**

# MEDICATION SAFETY PUBLICATIONS

## 2. Medication safety culture among community pharmacists

The objective of this study was to assess the knowledge, attitudes, and practices (KAP) among community pharmacists in Lebanon with respect to potential pharmacovigilance and adverse-drug-reaction reporting in Lebanon.

The majority of responders had good knowledge concerning the concept and purpose of pharmacovigilance as well as adverse drug reactions (how to report these/the importance of reporting adverse events/the definition of an adverse event and pharmacovigilance).

Regarding attitudes and practice towards pharmacovigilance, the majority of community pharmacists declared having a positive attitude towards their role in adverse drug reaction reporting and this activity was even seen as one of their core duties. The questionnaire revealed a lack of practice and training regarding pharmacovigilance.

Nonetheless, the pharmacists agreed on the Order of Pharmacists in Lebanon and the Ministry of Health's role in promoting this practice and helping them be more involved in reporting adverse drug reactions. The pharmacists thought that they are well positioned regarding patient-safety practice in their pharmacies and the results were not statistically different between pharmacy employers and employees.

## **MEDICATION SAFETY PUBLICATIONS**

### **3. Medication safety culture among hospital pharmacists**

Due to the potential significant impact of medication-related adverse events on hospitalized patient safety, there is a need to specifically assess hospital pharmacists' experience with medication safety practices. The aim of this study was to evaluate the knowledge, attitude, and practice (KAP), among hospital pharmacists in Lebanon concerning ADR, medication safety and the pharmacovigilance concept.

The obtained results suggested that Lebanese pharmacists had little knowledge about the concept and process of PV and spontaneous adverse drug reactions (ADRs) reporting system. However, the pharmacists had positive attitudes, but very little experience with reporting. Educational programs are urgently needed to emphasize the role and responsibility of pharmacists in PV practices, and to raise awareness toward ADRs reporting process, and thus to have a positive impact on patient caring process. The KAP of these pharmacists could be significantly changed after implementing these educational programs.

# MEDICATION SAFETY PUBLICATIONS

## 4. Medication safety culture in the general population

Patients' knowledge of their medications play a pivotal role in their disease management. The objective was to assess the knowledge and practices of Lebanese outpatients regarding their own medication use and risks, in 460 community pharmacies across Lebanon. The study comprised 921 patients, with around 16% taking  $\geq 5$  medications/day.

Around 56% of the patients showed sub-optimal medication knowledge. Patients' higher educational level, number of chronic diseases, and patient-physician interaction were associated with higher medication knowledge. Many patients admitted not discussing their medications each time they visit their physicians (38.7%); not reading the leaflet of each medication they take (61.2%); and not regularly asking their pharmacist about the potential interactions of OTC drugs with prescribed medications (53.9%).

This study showed suboptimal medication-related knowledge, and suboptimal patient's interactions with primary care givers. Our findings serve as a platform for healthcare providers to understand patients' needs and educate them about medication use and risks.

# PATIENT-RELATED AND CLINICAL RESEARCH

## 1. Introduction

The pharmacists' major role is to be a caregiver for patient, through management of disease treatment and counseling regarding medications and lifestyle. Based on this, the OPL thought about evaluating this role among community pharmacists, to identify the gaps and fill them up through continuing professional development programs.

Several conditions were selected, including chronic bronchitis and chronic obstructive pulmonary disease (COPD), antibiotics use and oral health counseling.

# PATIENT-RELATED AND CLINICAL RESEARCH

## 2. Chronic bronchitis and COPD

There are virtually no epidemiological studies from Lebanon assessing the level of knowledge of community pharmacists regarding chronic bronchitis and Chronic Obstructive Pulmonary Disease (COPD). Therefore, the objectives of this study were to evaluate whether the Lebanese community pharmacists have the sufficient knowledge about COPD and explore their attitudes and perceptions towards the management of this disease.

In the current study, around half of Lebanese community pharmacists self-assessed that they have good knowledge on key components of COPD and its treatment. Half of the participants showed a positive attitude towards COPD and perceived that they have an important role in counseling COPD patients. The KAP components demonstrated a strong positive relationship. COPD medication counseling was found to be medicinal product driven as well as based on lifestyle changes and the individual status and needs of the patient. Therefore, it is important to acknowledge that when pharmacists are included in the support system for any patient group, their capabilities of fulfilling their role have to be assessed. Also, continuing education is needed to increase community pharmacist's knowledge about COPD in order to reach better patient outcomes in COPD management and treatment.

## PATIENT-RELATED AND CLINICAL RESEARCH

### 3. Oral health counseling

Community pharmacists' contribution in health promotion and maintenance is significant but more studies are still needed to evaluate their role as oral and dental healthcare providers. To assess the knowledge, attitude, and practice among community pharmacists in Lebanon towards dental care and evaluate their educational needs related to oral health counseling, the OPL and the Saint-Joseph University (USJ) jointly conducted a national cross-sectional study using an online questionnaire and targeting community pharmacists in Lebanon.

Overall, pharmacists showed a good perceived knowledge, a positive attitude and a reasonable practice regarding oral health. The main reported barriers included limited interaction between dentists and pharmacists (52%) and lack of training (49%). Lebanese community pharmacists have the overall required knowledge and positive attitude to play an important role in dental care despite all barriers and difficulties. Pharmacists also expressed further need for education/training and growing partnership/collaboration with dental healthcare professionals.

# PATIENT-RELATED AND CLINICAL RESEARCH

## 4. Antibiotics (ATB) use among patients

High levels of ATB misuse and resistance are increasingly reported, particularly in developing countries. The aim of the present study was to investigate the current level of knowledge, attitude and practices of adults living in Lebanon towards antibiotic use and resistance. A descriptive survey was conducted in community pharmacies randomly chosen all over Lebanon.

The majority of 906 respondents reported having taken ATB within the past six months (60%), and more than one third having taken them within the past month (34%). One quarter of the respondents had never heard about ATB resistance.

The majority (79%) thought that “Antibiotic resistance occurs when the body becomes resistant to antibiotics and they no longer work as well” when this is in fact a false statement.

Additionally, 61% of respondents thought that the statement “Bacteria which are resistant to antibiotics can be spread from person to person” was true and 52% thought that the statement “Antibiotic resistance is only a problem for people who take antibiotics regularly” was true, while in fact it is false.

This study revealed several misconceptions and a lack of awareness on the use of antibiotics and resistance, which should drive the OPL to act more efficiently in raising awareness through campaigns in collaboration with concerned authorities.

# CONTINUING EDUCATION PUBLICATIONS

## 1. CE implementation in Lebanon

The Continuing Education (CE) for pharmacists became mandatory in Lebanon as of January 2014. The OPL started to offer CE sessions in all the Lebanese regions, some specific to therapy and others to soft skills.

Afterwards, the OPL aimed at describing the process of the implementation of the mandatory CE Program for pharmacists in Lebanon, and to assess the overall adherence to this program comparing groups according to the date of their registration to the Lebanese pharmacists' association and the barriers related to CE Program adherence. By the end of October 2017, an evaluation of the situation was performed using the electronic reports available through the Learning Management System.

Among all of the registered pharmacists in Lebanon, 68.30% started their CE and 26% already achieved their required credits. Among pharmacists enrolled in the CE system, the majority (69%) used the online courses at least once. Moreover, CE enrolment was similar among old and young pharmacists except for those newly registered. Barriers to CE starting were resistance to change, lack of interest, lack of time, and difficulties in commuting and technology use. These results are different from those observed in the developed countries although the barriers are the same; the resistance to change is higher.

**The OPL is working to find proper solutions to overcome encountered barriers with the ultimate objective of improving pharmaceutical services and patient care.**

# CONTINUING EDUCATION PUBLICATIONS

## 2. Motivation and value to CE

This study had 2 objectives:

- To describe the overall motivation/value of pharmacists towards the CE system adopted in Lebanon.
- To determine the factors favoring the motivation and value.

This study showed that many pharmacists perceive CE programs as valuable and very effective in advancing their knowledge. There was no correlation between higher education and the overall motivation towards CE.

Pharmacists practicing in community or healthcare settings showed significantly higher motivation towards CE than other pharmacists working in other sectors.

A noteworthy finding was the correlation between CE motivation/value and easiness in using the available CE platforms and programs via internet and pharmacists' awareness about their requirements and responsibilities. We also found that those who actually attend live CE courses and prefer participating in live sessions were more motivated towards Continuing Professional Development (CPD) and valued its benefits more.

## CONTINUING EDUCATION PUBLICATIONS

### 3. Computer literacy and CE practice

The present analysis was designed to evaluate the correlation between computer-literacy and other baseline characteristics of pharmacists and each type of CE activity.

The bivariate analysis of factors associated with achieving online CE credits showed that significantly higher computer literacy, number of working days per week and number of working hours per day were found in pharmacists achieving online CEs compared to those who were not. In addition, significantly lower age and number of years practicing pharmacy were found among pharmacists achieving online CEs compared to those who were not.

Moreover, a significantly higher percentage of pharmacists with a PharmD degree, those who graduated from outside Lebanon, who work in South Lebanon, who found the access to the OPL e-library easy and those who are not aware of the number of CE credits achieved so far, achieved online CEs compared to those who did not.

## CONTINUING EDUCATION PUBLICATIONS

### 4. CE and hospital pharmacy

The objective of this study was to assess the perceptions of pharmacists working in Lebanese hospitals on CE preferences. The majority of participants who completed the questionnaire (86.2%) agreed that CE programs affect their way of practice and increase their knowledge.

Their preferred CE types to be used in the future were the computer based ones (60.6%), interactive workshops (45.5%) and printed materials (44.9%). Their considerations for selecting the CE type is based on their interest in the topic (80.6%), the ease of access to print or online material (77.2%), or the convenience of being offered during an event (67.1%).

Participants noted that barriers to attend live CEs were mainly work responsibilities (76%), travel distance (65.6%), family commitments (48.4%) and scheduling (40.6%). Lebanese hospital pharmacists are highly committed to CE. They consider it a practical tool for career development and advancement.



# نقابة صيادلة لبنان ORDER OF PHARMACISTS OF LEBANON

## **Order of Pharmacists of Lebanon**

Corniche Al-Nahr, Pierre Gemayel Street, Pharmacists' Pension Fund bldg., 6<sup>th</sup> floor.

PO Box: 11-2807, Beirut - LEBANON

Phone: +961 1 611081

Fax: +961 1 425247

E-mail: [opl@opl.org.lb](mailto:opl@opl.org.lb)

---

## **Drug Information Center**

Corniche Al-Nahr, Pierre Gemayel Street, Pharmacists' Pension Fund bldg., Ground floor.

PO Box: 11-2807, Beirut - LEBANON

Phone: +961 1 611344

Fax: +961 1 611342

E-mail: [dic@opl.org.lb](mailto:dic@opl.org.lb)