

INTRODUCTION

- ▶ Pharmacy practice have considerably evolved over the past decades.
- ▶ To be at the right place doing the right things, pharmacy residents have to think about the challenges they will face.

OBJECTIVE

- ▶ To assess the perception of Quebec pharmacy residents on pharmacy challenges.


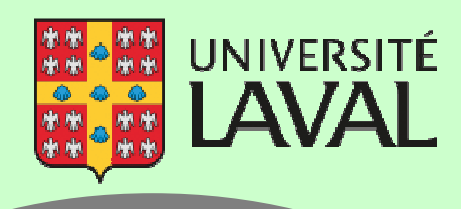
METHOD

- ▶ Following a review of the literature, we identified 48 challenges that might impact pharmacy practice in the future.
- ▶ An e-questionnaire was elaborated and tested with 10 French residents.
- ▶ Considering the need to expose residents to the challenges they will face, all Quebec pharmacy residents received the survey.
- ▶ Residents were asked to rate the possible occurrence of each challenge by 2025 (very likely=1; likely=2; unlikely=3; very unlikely=4). An average score was calculated for each statement.
- ▶ Descriptive statistics were performed.

Demographic data of pharmacy residents

Demographic data	n (%)
Sex	
Female	39 (64%)
Male	22 (36%)
University	
Laval	21 (34%)
Montreal	40 (66%)
Experience in community pharmacy	61 (100%)
Median [min-max] (weeks)	53 [8-900]
Experience in hospital pharmacy	55 (92%)
Median [min-max] (weeks)	16 [7-280]

61 residents participated in the survey (98% response rate)

Median [min-max] age
24 [21-35] years

CONCLUSION

- ▶ Pharmacy residents are tomorrow's generation and their perceptions of professional challenges are important to consider in their education, training and practice.

Legend

- Challenge considered by the pharmacy residents to be likely by 2025. Average score < 2
- Mixed opinion. 2 < Average score > 3
- Challenge considered by the pharmacy residents to be unlikely by 2025. Average score > 3

Specific hospital pharmacy challenges

Challenges	Average score (n)
Collaborative practices – A majority of hospital pharmacists will work in collaboration with other professionals	1.06 (34)
Documentation of practices – A majority of hospital pharmacists will document their pharmaceutical plan in the patient file	1.09 (33)
Robots – A majority of hospital doses dispensed will be prepared through automation	1.19 (42)
Drug compounding – A hospital pharmacy department will have to be certified by a national regulatory authority to be allowed to compound drugs for patients within the hospitals	1.37 (40)
Tech-check-tech – A majority of hospital drug distribution/dispensing activities will be performed by pharmacy technicians and checked independently by another pharmacy technician	1.40 (45)
Traceability – A majority of drug doses dispensed will be traceable through barcode used at patients' bedside	1.47 (55)
Pharmacists' accountability – Hospital pharmacists will be held accountable to evaluate and monitor patients outcome following their activities and interventions	1.52 (46)
Certification – A majority of hospital pharmacy technician will be locally or nationally certified to be allowed to perform tasks including tech-check-tech	1.59 (59)
Traceability – A majority of drug doses compounded by the hospital pharmacy will be traceable through imaging	1.67 (48)
Teach drug administration – Hospital pharmacists will be allowed to TEACH independently sub-cutaneous administration	1.74 (43)
Consultation mode – A majority of patients followed by a hospital pharmacist will be identified following a medical consultation request	1.82 (50)
Pharmacist/physician communication – A majority of hospital pharmacists will use smart phones to interact with physicians to clarify drug prescriptions and drug related problems	1.93 (60)
Electronic health record features – A majority of patients will get access to advanced features of electronic health record to participate actively to their care	2.08 (59)
Telepharmacy drug distribution – A majority of hospital pharmacists will validate drug orders from a distant site	2.10 (60)
Prioritization – A majority of hospital pharmacists daily workload will be determined by software that will identify/target relevant patients based on a higher probability of drug-related problems	2.13 (60)
Pharmacists at the bedside – A majority of hospital pharmacists will spend all their time at patients' bedside or in patient care programs	2.22 (54)
Medication errors – A majority of drug errors occurring within a hospital will be reported in a national registry that patients and all stakeholders will be allowed to monitor and consult	2.24 (54)
Telepharmacy clinical services – A majority of hospital pharmacy department will be equipped or have access to a telepharmacy infrastructure to treat and follow patients at distance	2.34 (59)
Pharmacy dispensing – A majority of hospital pharmacy department will operate without any pharmacists but only pharmacy technicians for drug dispensing	2.35 (55)
Clinical pharmacy activities – A majority of clinical pharmacy activities will be performed by clinician nurses (e.g. medication reconciliation)	2.63 (59)
Lawsuits – A majority of hospital pharmacy departments will have been sued by patients for medication errors	2.83 (59)
Pharmacist remuneration – Hospital pharmacists will be paid on the basis of the number of professionals activities performed	3.12 (59)
Hospital pharmacy leadership – A majority of hospital pharmacy departments will be managed by non pharmacists	3.19 (60)

Academic challenges

Challenges	Average score (n)
Credentials – Hospital will require pharmacists to have complete a formal post-graduate training to be hired and work within the hospital	1.35 (48)
Academic programs – A majority of the evaluation conducted during an academic pharmacy curriculum will be based not only on knowledge but also abilities and competencies	1.41 (39)
Professional portfolio – Pharmacists will have to document their continuing education in a web portfolio on the website of a regulatory authority	1.62 (50)
A la carte training – Pharmacists will be required to complete "à la carte" online advanced training to be allowed to perform certain activities	1.63 (43)
Competency evaluation – A majority of pharmacists will be evaluated periodically to assess their competencies	1.72 (36)
Virtual teaching – A majority academic clinical patient cases during undergraduate and post-graduate training will be taught using	1.93 (57)

General pharmacy challenges

Challenges	Average score (n)
Lab prescribing – Pharmacists will be allowed to PRESCRIBE independently labs	1.17 (29)
Drug prescribing – Pharmacists will be allowed to ADJUST independently drug therapy	1.20 (30)
Drug prescribing – Pharmacists will be allowed to RENEW independently drug therapy	1.27 (29)
Procurement of medicines – A majority of pharmacists will frequently encounter drug shortages	1.34 (58)
Drug prescribing – Pharmacists will be allowed to INITIALLY PRESCRIBE independently drug therapy	1.43 (30)
Social medias – A majority of pharmacists will have a presence on the web and be active in blogging	1.74 (59)
Outcome-based practice – A majority of pharmacy will organize and prioritize their practice based on patient outcomes (i.e. evidence based pharmacy)	1.91 (54)
Vaccine administration – Pharmacists will be allowed to ADMINISTER independently vaccines	1.98 (59)
Technician regulation – Pharmacy technicians will be regulated by the pharmacy regulatory authority and will have a right to say in the evolution of pharmacy practice	2.12 (60)
Specialized channels – A majority of new drugs commercialized in a given market will be launched and publicized for professionals and patients on specialized channels to avoid any delays in knowledge transfer	2.48 (60)
Patient/pharmacist communication – A majority of patients will interact with their pharmacists through emails for questions and follow-up	2.55 (60)
Patient compliance – A majority of patients will use Apps on their smart phone to document their compliance of drug therapy and these data will be synchronized with pharmacy information systems for online compliance monitoring	2.57 (61)
Pharmacogenomics – A majority of patients' genome will be done early in their life and pharmacists will have access to these results to adjust drug therapy based on known polymorphisms to avoid side effects or optimise expected drug effects	2.70 (61)
Patients' use of smartphone – A majority of patients will use their smartphone to register a conversation with a pharmacist to allow quiet listening once at home	2.82 (61)
Patients speak up – Patients will be allowed to blog on Pubmed (like pubmed commons for professionals/authors) and comment published articles	3.15 (61)

Specific community pharmacy challenges

Challenges	Average score (n)
Rate your pharmacist – A majority of pharmacists will have been rated by a significant number of patients on "rateyourpharmacist" type of websites	2.28 (61)
Internet community pharmacy – A majority of patients will buy their outpatient/home medication through internet websites, keeping the option to go the related/affiliated street-based pharmacy	2.61 (61)
Reimbursement – A majority of outpatient/home-based drug prescriptions will be reimbursed by third party payers only if they are processed through online pharmacies (i.e. internet pharmacy)	2.77 (61)
Community pharmacy ownership – A majority of community pharmacy will be owned by non pharmacists	3.05 (61)