

## Editorial

**Pharmacy education to transform and strengthen healthcare:  
a call for action and reflection during COVID-19 epidemic**

Recent events associated to the COVID-19 pandemic have challenged the healthcare workforce by assigning new roles and expanded responsibilities to practitioners. Pharmacists worldwide are not the exception. Suddenly and with very little previous notice, pharmacists were expected to test, treat, immunize and educate within an evolving and uncertain clinical, service delivery and health policy environment. Adaptations to be able to respond to the epidemic came about without adequate planning or enough scientific evidence. Decisions in the work environment seemed to be chaotic and not sensible to the needs and safety of the pharmacists. Furthermore, healthcare systems around the world are still trying to figure out how to address deep rooted inequalities and the access to care for the most vulnerable. The effects of COVID-19 illness, especially deaths are mostly disproportionately distributed among the essential health care workers and the poorer communities within countries and across continents. In times of health crisis, the pharmacist must assume leadership roles in health promotion, disease prevention and the efficient and effective treatment of sick people. The strengthening of pharmaceutical education with critical and system thinking skills can contribute to pharmacists being able to respond to the unpredictability and evolution of pandemic crises such as COVID-19. This pandemic has highlighted the need for pharmacists working in hospitals, primary care centres and community pharmacies to be available to patients; identify or detect clinical presentations of the virus; identify the emergence of other health problems and complications associated with the health virus; promote health and prevention; ensure the effectiveness of medications and treatments; prevent the side effects caused by them and make decisions in the responsible use of limited healthcare resources.

Looking back to a year of unprecedented changes and responses, we should reflect on how we should better prepare the upcoming pharmacists to deal with situations like this? Are colleges of pharmacy providing students with the necessary skills to contribute to serious health threats? We need to recognize that pharmacy as a discipline has been through a significant transformation since the mid-1960s, redefining itself as a clinical profession. It has evolved into a patient-centred career. This important transition brought new roles for the pharmacists in the provision of health services not only in community pharmacies, but also in primary health care settings, and hospital-based programmes. It also allowed the insertion of pharmacists in clinical prevention strategies as medication therapy management and immunizations. Fundamentally, the pharmacists are the health professionals specialized in medicines, with training and practice in formulation, distribution and therapeutic impact of the aforementioned. They possess profound knowledge in pharmacology and therapeutics, drug's physiochemical properties and other products,

bio-pharmacy and pharmacokinetics, drug's adverse reactions and interactions and psychosocial aspects related to the use of drugs. This level of scientific knowledge qualifies them in a differentiated fashion to exercise a series of roles as part of a health professional team. Because of this unique scientific training and expertise, pharmacists need to step up their contribution to impact health care systems.

Since the 1990s, colleges of pharmacy increasingly embraced curricular changes, based on competency development frameworks, in which students were expected to develop skills to identify populations at risk or who will be at risk. Most colleges worldwide provide information and skills to students to become patient educators, defend patient's rights (advocacy), collaborate on inter-professional groups, demonstrate cultural sensibility and be an effective communicator. Some academic programmes have trained students to go further by teaching them how to increase patients' health literacy and empowerment so that patients can be in control of their health and access health services. This training enabled the pharmacists to respond during the current pandemic. In the mist of the pandemic, no one questioned the expanded roles of the pharmacists and immediately many countries officially expanded their scope of practice. Major vaccination sites around the world are being staffed and run by pharmacists or by inter-professional teams with a central role of the pharmacists. Coalitions and partnerships are formed in which pharmacy services and networks are redefined to participate in testing and vaccinations. The media has extensively highlighted this contribution and the demand for pharmacists and pharmacy services have increased.

However, I postulate that this not enough. The potential of pharmacists as agents of change can be further advanced and enhanced if pharmacy education boldly contemplates a renewal of its curriculum, including the fundamentals courses, advanced courses, clinical laboratories and rotations to: (1) integrate the concepts of social determinants of health, inequities in health, economics and sustainable development and social justice; (2) encourage exploration of the pharmacist's role in emerging public health issues locally and globally; (3) emphasize critical and collective thinking and analysis and (4) strengthen the use of evidence and population data that allows them to evaluate and contextualize the differentiated impact of social determinants, epidemics and actions. An enhanced set of cross-cutting contents and skills needs to be integrated, sooner than later, in pharmacy education. Upon graduation, pharmacists should have the skills to plan, implement, manage and evaluate public health programmes, including identification of stakeholders and establishment of partnerships; and perform health economic and health impact assessments. They should be able to identify and act upon

the intersection of medication use and safety with environmental and social determinants on health and diseases; identify groups with elevated risk and recognize their needs. Also, central to this approach is an in-depth understanding of how regulatory issues associated to medication overlap with health policy, economics, health financing and management. Differences in the distribution of resources, including pharmaceutical services and products, call for the developing of skills to respond to the ethical aspects of population interventions, strategies and policies; and to ensure the implementation of ethical principles with a non-discriminatory approach.

At present, not all practice scenarios facilitate pharmacists' active participation in these activities and many of them are not adequately remunerated. Parallel to educational reform, the profession's leadership need to be convinced of the transcendental role and value added of pharmacists in major health and disease events, like the

COVID-19. There is resistance from certain pharmacy educators to the changes due to the fear that the expanded scope can minimize the fundamental role and loss of professional identity. Also, changes also face resistance outside the profession and among other professionals. The expansion of roles is seen a threat. But, the evolution is happening, and the pharmacists cannot ignore the call to insert themselves as leaders and agents of change in solving important health challenges, with new set of skills.

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