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Advanced Practice Nursing Roles: A Comparison Between Mexico and the United Kingdom

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The COVID-19 pandemic has placed nursing at the forefront of public attention across the globe and has highlighted the critical role of nursing in healthcare service provision. Advanced practice nursing has been recognized for more than 50 years, but the rate of its growth and development varies significantly across the world. One of the key aims of the Better Health Programme Mexico, which commenced in 2019, was to develop advanced practice nursing in Mexico. The Programme was based on the United Kingdom model, where advanced practice nursing has been in place—though not subject to statutory regulation—for more than 40 years. The aim of this article is to compare the frameworks that underpin advanced practice nursing in the United Kingdom and in Mexico. In the present article, current practice in both countries was researched, and the structure, systems, and processes relating to nursing regulation and the frameworks to support advanced practice nursing were examined. A gap analysis report undertaken as part of the Better Health Programme identified challenges in developing advanced practice nursing in Mexico and the United Kingdom and highlighted the need for stakeholders to agree on an approach toward a rigorous regulatory framework in both settings. In summary, this article highlights the issues facing nurses and regulators in both countries in terms of advanced practice nursing and identifies strategies that can be used to strengthen the advanced practice nurse role.

Keywords: Advanced practice nursing, regulation, regulatory frameworks, United Kingdom, Mexico

Since early 2020, which was designated as the International Year of the Nurse and the Midwife by the World Health Organization (WHO), nurses everywhere have been at the forefront of the global COVID-19 pandemic. They continue to provide essential care to those who present with debilitating symptoms, including severe respiratory failure. The pandemic has highlighted the importance of the role of nursing and in particular advanced practice nursing.

Aim

The aim of this article is to compare the regulatory frameworks that underpin advanced practice nurse roles in Mexico and in the United Kingdom. The context for this work was part of the Better Health Programme Mexico, which commenced in 2019. The Programme is a Prosperity Fund initiative funded by Official Development Assistance (government aid targeting economic development in developing countries). It focuses on improving health in targeted countries with the goal of driving economic growth and reducing poverty. Specifically related to Mexico, a key aim of the program was to develop advanced practice nursing in Mexico based on the UK model, where advanced practice nursing has been in place for more than 40 years (DAI, n.d.). This program should attract new opportunities for international business, including creating opportunities for the United Kingdom's healthcare sector through the beneficial sharing of UK expertise with key healthcare stakeholders in the targeted country—in this case, Mexico. The other countries participating in this program are Brazil, South Africa, Malaysia, Myanmar, Philippines, Thailand, and Vietnam.

Healthcare Systems

United Kingdom

In the United Kingdom, the National Health Service (NHS) was established in 1948 on the principles of being comprehensive, universal, and free at the point of delivery. It is paid for by tax revenue (Greengross et al., 1999). Every 24 hours, 1 million patients are treated through the NHS, and it is the fifth largest employer in the world with 1.3 million employees (NHS, n.d.). The estimated UK population in mid-2019 was 66,796,807. However, as in many other countries, the United Kingdom has an increasing aging population, with 12.4 million people (representing 18.5% of the population) aged 65 years or older; of these, 2.5% are aged 85 years or older (Office for National Statistics, 2019).

Mexico

In 1943, the current Mexican healthcare system was founded under the Bismark Model as a limited healthcare system. This system led to the creation of social security institutions, including the prominent Mexican Institute of Social Security, which aims to provide healthcare and social benefits to industrial workers and their families (Organisation for Economic Co-operation and Development [OECD], 2016). Social security expanded in 1960 to provide care to government workers as well. The Secretariat of Health and Assistance (later called the Secretariat of Health) was also created to provide healthcare to the population that was not covered by social security institutions. This dual model expanded until 1970, when the Mexican economy had a reduction in growth. As a result, populations not covered by social security started to grow; consequently, so did the public institutions that covered them, particularly the Secretariat of Health (Knaul et al., 2013).

In the 1980s, the percentage of the population covered by each institution was about the same, but the social security institutions consumed more resources given its tripartite financing scheme in which workers, employers, and the Mexican government shared responsibilities. Unlike social security, the Secretariat of Health exclusively depended on general taxes. Currently, 45 million Mexicans receive healthcare from social security institutions, 55 million from the Secretariat of Health and other public institutions, and the rest of the population (around 20 million) either receive care from private healthcare providers (mainly financed by out-of-pocket payments) or have no health coverage at all (González-Block, et al, 2020). Although the majority of the population is cared for by social security and public institutions, there have been longstanding restrictions in the provision of services, tests, medicines, and quality of care that push people to buy goods and services privately. Therefore, 51% of the total health expenditure is private (out-of-pocket and health insurance) and 49% corresponds to public expenditure, channelled through social security and public institutions (Instituto Nacional de Estadística y Geografía, 2021).

Healthcare Expenditure

In terms of expenditure on healthcare in both countries, the United Kingdom spends approximately 10% of its gross domestic product on health via taxation and has one of the highest shares of publicly funded healthcare (79%) (OECD, 2021). In contrast, Mexico spends 6.2% of its gross domestic product on healthcare, approximately half of it from private sources. The UK government spends approximately US $4,036 (£2,989) per person on healthcare (12th out of 48 countries), whereas the Mexican government spends US $1,130 (£837) per person (44th out of 48 countries) (OECD, 2021).

Nursing Workforce Trends (Education, Labor Market, and Migration)

United Kingdom

In the United Kingdom, the number of registered nurses, midwives, and nursing associates (a nursing associate is a regulated professional who works within the nursing team but has not undertaken a course of study leading to a registered nursing qualification) has increased in recent years. In March 2017, there were 690,773 professionals in the Nursing and Midwifery Council (NMC) register (NMC, 2017). By September 2021, this number rose to 744,929 (NMC, 2021), although not all of these nursing professionals work in the NHS. The United Kingdom has fewer nurses per population than the OECD average (including all NHS nurses and non-NHS nurses), and the ratio is lower than many European Union and traditional comparator countries (The Health Foundation, 2017). As seen in many countries worldwide, nursing vacancies remains one of the biggest challenges to providing healthcare in the United Kingdom (NHS Digital, n.d.). The percentage of nursing vacancies in 2019 has risen from 7.2% to 9.4%, demonstrating the increased number of nursing and midwifery posts required to meet demand (NHS Digital, n.d.). The vacancies cover all settings—acute, ambulatory, community, and mental health, as well as specialist areas such as critical care—with stark differences across regions. Of note, these figures do not represent the nursing workforce requirement in sectors outside the NHS, notably in social care. The number of professionals leaving the register has decreased each year between 2017 and 2020. However, between 1 October 2020 and 30 September 2021 a total of 24,993 nurses left the NMC register. This is an increase of 11.3% compared with the same period in the previous year (1 October 2019 – 30 September 2020). Just over 61% of those who left the profession were aged 55 years or older, suggesting that a notable proportion of nurses are leaving the profession before the end of their working lives (NMC, 2021).

Mexico

The Mexican Health System employs around 2.2 million workers in public institutions, of whom 300,000 are nurses of different levels of training (Instituto Nacional de Estadística y Geografía, 2019; Secretaría de Salud, 2018). Approximately 45% of nurses are employed in private institutions (Nigenda et al., 2022). Over the past 20 years, there has been a sustained increase in the number of nursing graduates. In 2001, 2,400 nurses were graduating annually from universities; by 2020, the figure reached 25,000 (Asociación Nacional de Universidades e Instituciones de Educación Superior, n.d.). A substantial proportion of this growth (45%) is explained by the expansion of private education across Mexico. Nursing positions within Mexican healthcare institutions are created according to financial availability, which is defined by the government. Therefore, it is not possible to estimate how many nursing positions are truly required to meet patient demand or to approximate how many positions are vacant. This knowledge gap does not allow for adequate planning of education and training of nurses to meet institutional requirements. Ironically, this has led to an oversupply of nurses in relation to funded positions.

By 2019, 5% of nurses in the labor market were unemployed and 25% were underemployed (ie, carrying out activities below their training level) (Montañez-Hernández et al., 2020). These data essentially point to a waste of labor for 150,000 nurses.

Until 2000, positions were characterized by fixed permanent positions. These positions were unionized, which granted workers greater employment rights and security. However, new contracting processes individualize the relationship between the worker and the institution, as contracts are not negotiated by unions. Data from the National Survey of Occupation and Employment showed that by 2018, precarious work affected 53% of all Mexican nurses (Aristizabal et al., 2019).

Mexican nurses have long migrated outside of Mexican territories, but overall the numbers are low. Upon the signing of the North American Free Trade Agreement, many expected a huge emigration of Mexican nurses to the United States or Canada. However, the numbers of nurses emigrating remained reduced because of juridical, professional, and language barriers. Most of the jobs being offered by these countries were in aged care, home care, and palliative care of terminally ill patients. Recently, European countries such as Germany have expressed a desire to recruit Latin American nurses, including Mexican nurses, but no significant numbers of Mexican nurses have emigrated (Alcaraz, 2021).

Regulation of Nursing

United Kingdom

Nurses have been regulated in the United Kingdom since 1919; midwives since 1902. Since then, a succession of different bodies has been responsible for regulating these professionals. Since 2002, the regulation of nurses, midwives, and specialist community and public health nurses, and since 2018, the regulation of nursing associates (England only), has fallen to the NMC, which was set up by Parliament to protect the public by ensuring that nurses and midwives provide safe, high standards of care to their patients and clients. The NMC does this through the following actions:

1. Maintaining a register of nurses and midwives who meet the UK registration requirements and nursing associates who meet the England registration requirements
2. Setting standards of proficiency and education and training, as well as standards of behavior, conduct, and ethics, which are enshrined in the NMC Code
3. Approving educational programs and ensuring the quality of professional education programs leading to professional registration
4. Requiring all registrants to reaffirm that they meet the required standards of proficiency, behavior, and conduct every 3 years through a process called revalidation
5. Investigating any serious concerns raised about a nurse, midwife, or nursing associate's fitness to practice, and taking action if needed (NMC, n.d.).

Any individual who wishes to become a registered nurse or midwife in the United Kingdom or a nursing associate in England needs to complete a degree program in a higher education institution that has been approved by the NMC. This requirement ensures that all professionals are consistently educated and meet the required high standards of proficiency, behavior, and conduct. To appear in the NMC register, individuals must have successfully undertaken an NMC-approved program, met all of the specified standards of proficiency, and demonstrated the standards of behavior and conduct that are enshrined in the NMC Code.

Following initial registration, registrants gain knowledge and skills through experience, additional formal education and training, and other forms of continuous professional development. They may gain additional knowledge and skills in specialist areas that will exceed those required at the point of registration. Although there are many roles with the title of "specialist nurse," these roles are poorly defined and unregulated by the NMC. They are very diverse in terms of role description, activities undertaken, level of autonomy, educational preparation, and pay. Some specialist roles may incorporate elements of skill and knowledge associated with advanced practice nursing, but others do not. In spite of this inconsistency, these roles proliferate because they add value to services and communities.

A key tenet of nursing regulation is that registrants are accountable for their actions and must abide by the NMC Code throughout their careers. The NMC Code is a statement of conduct, behavior, and ethics (NMC, 2018). It includes the requirement that nurses, midwives, and nursing associates be able to recognize and work within the limits of their competence, complete the necessary training before carrying out a new role, and maintain their knowledge and skills for safe and effective practice. These requirements acknowledge that nurses and midwives can work in diverse contexts and at different levels of autonomy and responsibility. It is therefore the Code that provides the regulatory framework within which individuals can develop their practice beyond their initial registration and negates the need to regulate the increasingly expanding numbers of individual specialist roles that exist. There are concerns, however, that this approach is not sufficient when considering roles that involve an advanced level of practice (Leary et al., 2017). Currently in the United Kingdom, there is no regulation or protected title for any postregistration nursing role that involves an element of advanced practice. By contrast, in Australia and the United States, "nurse practitioner" is a protected title and can only be used by those who have gone through the relevant processes to gain accreditation and licensure with their regulatory professional body (Driscoll et al., 2012).

The NMC regulates a small number of postregistration qualifications. In the context of advanced practice nursing, the most significant of these is prescribing. The NMC has recently updated and modernized all of its pre-registration standards of proficiency, standards for education institutions, and prescribing standards. Table 1 highlights all the standards that have been updated and provides the URL for each of them for further information.

TABLE 1

NMC Standards in the UK for Nurses, Midwives, Nursing Associates, and Prescribers

Midwifery standards (November 2019)

- **Standards of proficiency for midwives.** The knowledge and skills that midwives must have at the point of joining our register
- **Standards for pre-registration midwifery programs.** Requirements that apply to all pre-registration midwifery education programs

Return-to-practice standards (March 2019)

- **Return-to-practice standards.** The options available for those unable to meet the practice hours requirements for revalidation or readmission
- **Standards for return-to-practice programs.** Requirements that apply to all approved return-to-practice programs

Nursing associate standards (October 2018)

- **Standards of proficiency for nursing associates.** The knowledge and skills that nursing associates should have at the point of joining our register
- **Standards for pre-registration nursing associate programs.** The requirements that apply to all pre-registration nursing associate education programs

Standards for education and training (May 2018)

- **Standards framework for education and training.** Standards for providers of all pre- and postregistration nursing, midwifery, and nursing associate programs
- **Standards for student supervision and assessment.** How nursing, midwifery, and nursing associate students are supported and assessed in theory and practice

Nursing standards (May 2018)

- **Standards of proficiency for registered nurses.** The knowledge and skills that nurses should have at the point of joining the register
- **Standards for pre-registration nursing programs.** The requirements that apply to all pre-registration nursing programs

Prescribing standards (May 2018)

- **Standards for prescribing programs.** The requirements that apply to all prescribing programs
- **Adoption of the Royal Pharmaceutical Society's competency framework.** The knowledge and skills that nurse and midwife prescribers should have

Source. https://www.nmc.org.uk/education/programme-of-change-for-education/how-we-develop-our-standards/

Mexico

There are three levels of nursing training in Mexico: auxiliar after 6 years of formal education (equivalent to a diploma nurse in the United States), technical after 9 years of formal education (equivalent to an associate degree in nursing in the United States), and university after 12 years of formal education (equivalent to a bachelor of science in nursing degree in the United States). University training has become dominant in the past 10 years. It is normally provided in a 4-year structure where most of the subjects are practical clinical, while a minority are theory, philosophy, and research. After completing the program, graduates receive a title from the university, which has to be registered before the Ministry of Education.

The Mexican Government has control over the registry and licensing of all professionals. The General Law of Professions, passed in 1945, included the creation of the General Direction of Professions (DGP in Spanish), which is responsible for conducting the registry and granting practice licenses to all university graduates, including licenses for nursing and obstetric nursing graduates (Aristizabal et al., 2020). This process has been maintained under government control since its inception. When health personnel, including nurses, have discipline issues, users can file a claim with the National Commission of Medical Arbitrage. Nursing professional representatives have no authority to establish penalties for malpractice.

In the 1960s, the training of nurses at university level commenced. In Mexico, state universities preserve autonomy in the design and implementation of their program; as such, no professional organizations can influence these processes. Periodically, curriculum updates are undertaken. In the case of nursing programs, these adjustments are made based on changes to the epidemiological profile of the Mexican population. Despite these processes, it is possible to identify gaps between the trends of education and the organization of health services. An attempt was made to reduce these differences in 1983 with the creation of the Interinstitutional Committee for the Training of Human Resources for Health. Over the years, the Committee has been dedicated to conducting specific processes for the authorization of new schools and other similar issues but not undertaking strategic planning (Ledesma-Núñez, 2003).

Globalizing trends in education took hold in Mexico after 2000 with the accreditation of an educational program and the certification of individuals. With a goal of identifying new mechanisms to guarantee the quality of professional training, the Council for the Accreditation of Higher Education (COPAES in Spanish) was created as a civil organization rather than as a government agency. The Ministry of Public Education transferred the responsibility of organizing the accreditation of higher-education schools to COPAES through the creation of new civil organizations that specialized in each professional group. Accreditation is voluntary for 5 years, and re-accreditation can be undertaken after the initial expiration date. In 2003, the Mexican Council for the Accreditation of Nursing was created in its current version, and in 2007, it was authorized by COPAES to accredit nursing schools. The voluntary character of accreditation made the process slow, and by 2015, only 23% of programs were accredited, with the majority of these programs being at public schools (Instituto Nacional de Salud Pública, 2017). By 2019, official data showed that the number of nursing schools had grown to 311, with only 52 of them accredited (Secretaría de Salud, 2020). This phenomenon is partly explained by the growth of private schools, which have shown little interest in being accredited. Despite the fact that these processes are coordinated by a civil organization, the government still retains the responsibility of guiding them and exerting stewardship.

Nursing certification commenced in 2000. Certification, which is valid for 5 years, neither substitutes licensing nor implies that the lack of certification could lead to license withdrawal. Instead, certification is a voluntary process taken by graduate nurses periodically to obtain a new credential that can be used to enhance their qualifications and increase their labor opportunities (Aristizabal et al., 2020). Just after the turn of the century, the Mexican Council for the Certification of Nursing was created to certify graduate and specialist nurses. Between 2003 and 2015, additional other professional organizations negotiated with the DGP for authorization to certify nurses. Currently, there are three professional organizations that certify nurses, and two of them have been officially authorized by DGP: the Mexican Council for the Certification of Nursing and the Mexican College of Nurse Licentiates. Table 2 highlights the various guidelines for specialty practice in Mexico.

TABLE 2

Main Regulatory Guidelines for Nursing Practice in Mexico

Lineamientos que contienen criterios para la prescripción de medicamentos por el personal de enfermería (March 2017) (Guidelines containing the criteria for the prescription of medicines by nursing personnel)
Norma Oficial Mexicana NOM-007-SSA2-2016, para la atención de la mujer durante el embarazo, parto y puerperio, y de la persona recién nacida (April 2016) (Mexican Official Norm NOM-007-SSA2-2016, for the care of pregnant women, partum and puerperium, and the recently birth)
Norma Oficial Mexicana NOM-019-SSA3-2013 para la práctica de la enfermería en el Sistema Nacional de Salud (September 2013) (Mexican Official Norm NOM-019-SSA3-2013 for the practice of nursing in the National Health System)
Norma Oficial Mexicana NOM-022-SSA3-2012 Que instituye las condiciones para la administración de la terapia de infusión en los Estados Unidos Mexicanos (September 2012) (Mexican Official Norm NOM-022-SSA3-2012 that establishes the conditions for the administration of infusion therapy in Mexico)
Convenio entre la Secretaría de Educación Pública y el Consejo para la Acreditación de la Educación Superior (November 2000) (Agreement between the Ministry of Education and the Council for the Accreditation of Higher Education)
Colegio Mexicano de Licenciadas en Enfermería (COMLE) (Mexican College of Licensed Nurses)
Ley General de Profesiones 1945 (updated 2018) (General Law of Professions)

Development of Advanced Practice

A recent trend in the United Kingdom is to employ nurses and other professions allied with medicine in advanced clinical practice (ACP) roles to increase the number of healthcare professionals who are able to undertake complex diagnostic and clinical decision-making traditionally performed by physicians (Health Education England, 2017; Imison, 2016). Nuffield Health's report on reshaping the workforce highlighted the need to train, recruit, and upskill the workforce to ensure the NHS evolves to meet the health needs of the population (Imison et al., 2016). ACP roles offer opportunities for nurses and other non-medical healthcare professionals to increase their clinical skills, provide more autonomous and seamless care for the people they serve, improve clinical continuity, and address shortages in the medical workforce (Dover et al., 2019). The benefits of the ACP role are documented in the literature in acute and community settings (Aitkenhead & Lee, 2019; Jennings et al., 2009; Lee et al., 2014; Lee & Titchener, 2017; Moxham & McMahon-Parkes, 2020). However, the development of the role across Europe remains inconsistent (Lee et al., 2020).

In response, and in the absence of statutory regulation of ACP in the United Kingdom, other frameworks to support more consistent role definitions and standards of education and quality are being developed. The United Kingdom consists of four countries: England, Scotland, Northern Ireland, and Wales. Devolution grants a greater level of self-government to each individual nation. As health is a devolved matter, the Government professionals within the government offices in each country are able to develop their own local policies in relation to advanced practice.

In England, Health Education England (HEE) is the body responsible for ensuring that education is commissioned and provided to furnish the NHS with enough staff with the required skills and knowledge to meet the health needs of the population. In 2017, HEE developed a new definition for ACP roles by describing their scope and standardizing role functions, educational preparation, practice capabilities, and role development, as follows:

> *Advanced clinical practice is delivered by experienced, registered health and care practitioners. It is a level of practice characterised by a high degree of autonomy and complex decision making. This is underpinned by a master's level award or equivalent that encompasses the four pillars of clinical practice, leadership and management, education and research, with demonstration of core capabilities and area specific clinical competence* (HEE, 2017).

This definition is now adopted across England and Wales to standardize the role and allow consistent practice across all disciplines for ACP roles (HEE, 2017). It is anticipated that the 2020 establishment of the Centre for Advancing Practice and the accreditation of all universities running ACP programs will lead to more widespread uptake of standardized education programs leading to advanced practice (HEE, n.d.). It is also believed that these changes will lead to a more consistent approach to advanced practice roles across a range of disciplines.

There is also a renewed appetite to explore statutory regulation of advanced practice by the Health Care Professions Council, which is the statutory regulator of a range of professions allied to medicine, and the NMC. Should statutory regulation be implemented, protection of title is likely to be considered, as it would ensure that the chosen

title can only be used by those practitioners who have met regulated qualifications.

Global Future Trends of Nursing and the Role of the Regulatory Framework in Mexico

As part of the Better Health Programme, a gap analysis and thematic research were undertaken to identify the facilitators and barriers to advanced practice nurse development in Mexico (Nigenda et al., 2021). Four major issues were identified that impact the development of advanced practice nursing: (a) workforce, (b) organizational and institutional, (c) regulatory and legal, (d) academic and educational. Education and health institutions in Mexico have been making progress in the establishment of advanced practice nursing and the expanded role of nursing. The leading institution is the Secretariat of Health through its Permanent Commission on Nursing, an agency that is responsible for the advancement of nursing in the country, among other issues. This commission has been able to orchestrate programs in the education and practice of advanced practice nursing. Based on the definitions of the WHO advanced practice nurse program, institutions are impelled to create their own programs while taking into consideration the programs created by partner institutions.

According to WHO recommendations, advanced practice nurses must be educated to the master's level and have a public health focus. The Metropolitan Autonomous University was the first educational institution to provide advanced practice nurse training in Mexico, and it designed a masters' program that recruited its first class of advanced practice nursing students for the 2021–2022 academic year (Asociación Nacional de Universidades e Instituciones de Educación Superior, 2021). In parallel, the Permanent Commission on Nursing is preparing to launch pilot experiences in several states in Mexico that will allocate these advanced practice nurses to health centers where they can undertake expanded roles.

The expanded role is not clearly defined yet in the training profile. Therefore, every state has to consider the available legislation that authorizes nurses to carry out activities that were not previously authorized. For example, San Luis Potosí has authorized nurses in rural health centers to prescribe medications according to an agreement promoted by the Ministry of Health that was passed in March 2017 (Secretaría de Salud, 2017). In Chiapas, they have opened a health center staffed by obstetric nurses who are responsible for low-risk deliveries. These two examples demonstrate the promising future of the expanded role of nursing and advanced practice nursing in Mexico.

Shared Learnings for the Nursing Regulatory Framework in Mexico and the United Kingdom

It is clear that further work needs to be done in both locations to expand and develop advanced practice nursing in a way that is consistent, productive, uniformly understood, and safe for the public and professionals. The gap analysis report undertaken as part of the Better Health Programme identified clear challenges for the education, training, and practice of nursing in Mexico and the United Kingdom, and it highlighted the need for stakeholders to reach key agreements to establish rigorous frameworks to support the development of advanced practice nursing in both settings (Nigenda et al., 2021).

There is clearly strong motivation in both countries to achieve this goal and to ensure that the healthcare needs of their respective populations are met. Global application of an advanced practice nurse definition would be helpful to develop a coherent approach to the development of advanced practice nursing and to maximize the potential of nurses to meet healthcare needs. As outlined in the International Council of Nurses framework:

> *The focus of NP {nurse practitioner} practice is expert direct clinical care, managing healthcare needs of populations, individuals and families, in PHC {primary healthcare} or acute care settings with additional expertise in health promotion and disease prevention. As a licensed and credentialed clinician, the NP practices with a broader level of autonomy beyond that of a generalist nurse, advanced in-depth critical decision-making and works in collaboration with other healthcare professionals. NP practice may include but is not limited to the direct referral of patients to other services and professionals. NP practice includes integration of education, research and leadership in conjunction with the emphasis on direct advanced clinical care* (International Council of Nurses, 2020, p. 19).

The International Council of Nurses clearly outlines the NP scope of practice, which can then be interpreted within the regulatory and legal parameters of the different countries in which NPs may work. It defines what NPs can do, which populations can be seen or treated, and under what circumstances NPs can provide care. This scope of practice differs across the globe, but the framework provides a solid foundation to standardize the advanced practice nurse role. The examination of both Mexico and the United Kingdom demonstrates that developing appropriate education and professional standards are really important for advanced practice nurse roles (Nigenda et al., 2021) and that further work is needed in both countries (American Association of Nurse Practitioners, 2015; Schober, 2016).

Standardization of advanced practice nurse roles across the world is achievable, and an updated document on advanced practice, published in 2020 by the International Council of Nursing, contains examples of how advanced practice nurse roles are established in varying locations addressing the local population's healthcare needs (International Council of Nurses, 2020). The recent WHO report on the health workforce presented global strategic directions for nursing and midwifery and highlighted global issues around nursing (WHO, 2021). One of the recommendations was "Strengthening education capacity and quality: Educate enough nurses and midwives with the requisite knowledge, competencies and attitudes to fully meet health system needs and address current and future population health priorities" (WHO, 2021, p. 5). This clearly put advanced practice nurs-

ing on the global agenda, but it will be up to individual countries to ensure these changes occur.

Considering these findings and initiatives, the potential for advanced practice nursing is recognized across the globe. Mexico and the United Kingdom represent very different settings, but the facilitators and barriers identified can be applied in any setting to analyze and assess the readiness for advanced practice nurse development. The conditions in which advanced practice nursing can reach its potential appear to be contingent upon effective initial professional regulation and recognition, a definition of the advanced practice nurse role that is accepted and well understood among coworkers and across the healthcare system, and sufficient checks and balances to ensure safety and quality for those receiving and paying for advanced practice nurse care, both individuals and institutions. Advanced practice nurse roles themselves must be attractive to potential recruits in terms of job satisfaction, pay, and career advancement. These conditions are not guaranteed by statutory regulation alone, but experience in other countries demonstrates that it can assist in the absence of an alternative national policy.

Conclusion

The Better Health Programme has allowed reflection and critical examination of the regulatory frameworks in both the United Kingdom and Mexico around advanced practice nurse roles. It has highlighted the importance of advanced practice nurse accreditation and regulation, as well as the key role nurses play in delivering optimal care.

References

Aitkenhead, A., & Lee, G. A. (2019). The accuracy of paediatric limb radiograph interpretation by nurse practitioners in a single centre. *International Emergency Nursing, 45*, 36–42. https://doi.org/10.1016/j.ienj.2019.03.001

Alcaraz, Y. (2021, April 19). Enfermeros mexicanos, más valorados en Alemania. *El Sol de México*. https://www.elsoldemexico.com.mx/mexico/sociedad/evolucion-enfermeros-mexicanos-mas-valorados-en-alemania-personal-medico-pandemia-6614572.html

American Association of Nurse Practitioners. (2015). *Scope of practice for nurse practitioners.* https://www.aanp.org/advocacy/advocacy-resource/position-statements/scope-of-practice-for-nurse-practitioners

Aristizabal, P., Nigenda, G., Squires, A., Rosales, Y. (2020). Regulación de la enfermería en México: Actores, procesos y resultados. *Ciência & Saúde Coletiva, 25*(1):233-242. https://doi.org/10.1590/1413-81232020251.28462019

Aristizabal, P., Nigenda, G., & Serván-Mori, E. (2019). The precarization of the Mexican nursing labor market: a repeated cross-sectional analysis for the period 2005–2018. *Human Resources for Health, 17*(1), 87. https://doi.org/10.1186/s12960-019-0417-x

Asociación Nacional de Universidades e Instituciones de Educación Superior. (2021, October 12). En febrero de 2022 iniciará la maestría en enfermería de práctica avanzada en la UAM. http://www.anuies.mx/noticias_ies/en-febrero-de-2022-iniciar-la-maestra-en-enfermera-deprctica

Asociación Nacional de Universidades e Instituciones de Educación Superior. (n.d.). Anuarios estadísticos de educación superior: Ciclo escolar 2000-2021. http://www.anuies.mx/iinformacion-y-servicios/informacion-estadistica-de-educacion-superior/anuario-estadistico-de-educacion-superior

DAI. (n.d.). Mexico—Better Health Programme (BHPMx). https://www.dai.com/our-work/projects/mexico-prosperity-fund-better-health-programme

Dover, N., Lee, G. A., Raleigh, M., Baker, E. J., Starodub, R., Bench, S., & Garry, B. (2019). A rapid review of educational preparedness of advanced clinical practitioners. *Journal of Advanced Nursing, 75*(12), 3210–3218. https://doi.org/10.1111/jan.14105

Driscoll, A., Harvey, C., Green, A., Weatherby, R. P., Liew, D., Prentice, D., Lord, J., Lee, G., Crellin, D., Dobroff, N., & Heland, M. (2012). National nursing registration in Australia: A way forward for nurse practitioner endorsement. *Journal of the American Academy of Nurse Practitioners, 24*(3), 143–148. https://doi.org/10.1111/j.1745-7599.2011.00711.x

González Block, M. A., Reyes Morales, H., Cahuana Hurtado, L., Balandrán, A., & Méndez, E. (2020). Mexico: Health system review. *Health Systems in Transition*, 22(2). https://apps.who.int/iris/handle/10665/334334

Greengross, P., Grant, K., & Collini, E. (1999). *The history and development of the UK National Health Service 1948-1999* (2nd ed.). DFID Health Systems Resource Centre. https://assets.publishing.service.gov.uk/media/57a08d91e5274a31e000192c/The-history-and-development-of-the-UK-NHS.pdf

Health Education England. (2017). *Multi-professional framework for advanced clinical practice in England*. National Health Service. https://www.hee.nhs.uk/sites/default/files/documents/multi-professionalframeworkforadvancedclinicalpracticeinengland.pdf

Health Education England. (n.d.) Welcome to the Centre for Advancing Practice. https://advanced-practice.hee.nhs.uk/

The Health Foundation. (2017). *Rising pressure: The NHS workforce challenge*. https://www.health.org.uk/publications/rising-pressure-the-nhs-workforce-challenge

Imison, C., Castle-Clarke, S., & Watson., R. (2016). *Reshaping the workforce to deliver the care patients need*. Nuffield Trust. https://www.nuffieldtrust.org.uk/research/reshaping-the-workforce-to-deliver-the-care-patients-need

Instituto Nacional de Estadística y Geografía. (2019, December 11). *Cuenta Satélite del Sector Salud en México, 2019.* Comunicado de Prensa Núm. 638/20. https://www.inegi.org.mx/contenidos/saladeprensa/boletines/2020/StmaCntaNal/CSSS2019.pdf

Instituto Nacional de Estadística y Geografía. (2021, December 14). *Cuenta Satélite del Sector Salud en México, 2020.* Comunicado de Prensa Núm. 768/21. https://www.inegi.org.mx/contenidos/saladeprensa/boletines/2021/saludsat/saludsat.pdf

Instituto Nacional de Salud Pública (2017). *Brechas en la disponibilidad de médicos y enfermeras especialistas en el sistema nacional de salud. Informe final.* http://www.cifrhs.salud.gob.mx/site1/residencias/brechas_medico_enf_esp.pdf

International Council of Nurses. (2020). *Guidelines on advanced practice nursing 2020*. https://www.icn.ch/system/files/documents/2020-04/ICN_APN%20Report_EN_WEB.pdf

Jennings, N., Lee, G., Chao, K., & Keating, S. (2009). A survey of patient satisfaction in a metropolitan emergency department: Comparing nurse practitioners and emergency physicians. *International Journal of Nursing Practice*, 15(3), 213-218. https://doi.org/10.1111/j.1440-172X.2009.01746.x

Knaul, F. M., González-Pier, E., Gómez-Dantés, O., García-Junco, D., Arreola-Ornelas, H., Barraza-Lloréns, M., Sandoval, R., Caballero, F., Hernández-Ávila, M., Juan, M., Kershenobich, D., Nigenda, G., Ruelas, E., Sepúlveda, J., Tapia, R., Soberón, G., Chertorivski, S., & Frenk, J. (2013). Hacia la cobertura universal en salud: proteccion social para todos en Mexico [The quest for universal health coverage: achieving social protection for all in Mexico]. *Salud Pública de México, 55*(2), 207–235. https://doi.org/10.1590/s0036-36342013000200013

Leary, A., Maclaine, K., Trevatt, P., Radford, M., & Punshon, G. (2017). Variation in job titles within the nursing workforce. *Journal of Clinical Nursing, 26*(23–24), 4945–4950. https://doi.org/10.1111/jocn.13985

Ledesma-Núñez E. (2004). Comisión Interinstitucional para la Formación de Recursos Humanos en Salud (CIFRHS). *Anales de Radiología Mexicana, 3,* 219-221. https://web.archive.org/web/20180504150945id_/http://www.medigraphic.com/pdfs/anaradmex/arm-2004/arm043o.pdf

Lee, G., Hendriks, J., & Deaton, C. (2020). Advanced nursing practice across Europe: Work in progress. *European Journal of Cardiovascular Nursing, 19*(7), 561–563. https://doi.org/10.1177/1474515120917626

Lee, G. A., Chou, K., Jennings, N., O'Reilly, G., McKeown, E., Bystrzycki, A., & Varma, D. (2014). The accuracy of adult limb radiograph interpretation by emergency nurse practitioners: A prospective comparative study. *International Journal of Nursing Studies, 51*(4), 549–554. https://doi.org/10.1016/j.ijnurstu.2013.08.001

Lee, G. A., & Titchener, K. (2017). The Guy's and St Thomas's NHS Foundation Trust @home service: An overview of a new service. *London Journal of Primary Care (Abingdon), 9*(2), 18–22. https://doi.org/10.1080/17571472.2016.1211592

Montañez-Hernández, J. C., Alcalde-Rabanal, J. E., Nigenda-López, G. H., Aristizábal-Hoyos, G. P., & Dini, L. (2020). Gender inequality in the health workforce in the midst of achieving universal health coverage in Mexico. *Human Resources for Health*, *18.* Article 40.

Moxham, L., & McMahon-Parkes, K. (2020). An evaluation of the impact of advanced nurse practitioner triage and clinical intervention for medically expected patients referred to an acute National Health Service hospital. *Journal of Clinical Nursing, 29*(19–20), 3679–3686. https://doi.org/10.1111/jocn.15392

NHS. (n.d.). Chapter 4: NHS staff will get the backing they need. https://www.longtermplan.nhs.uk/online-version/chapter-4-nhs-staff-will-get-the-backing-they-need/

NHS Digital. (n.d.) NHS vacancy statistics (and previous NHS Vacancies Survey). https://digital.nhs.uk/data-and-information/publications/statistical/nhs-vacancies-survey

Nigenda, G., Lee, G., Aristizabal, P., Walters, G., & Zárate-Grajales, R. A. (2021). Progress and challenges for advanced practice nursing in Mexico and the United Kingdom. *Journal of Nursing Management, 29*(8), 2461–2469. https://doi.org/10.1111/jonm.13413

Nigenda, G., Zárate-Grajales, R.A., Aristizabal, P., Squires, A., Ostiguín-Meléndez, R.A., Salcedo R.A., Leija, C., Choperena, D., Serván-Mori, E. (2022). Labor market participation of bachelor's degree prepared nurses in Mexico: Lessons for capacity building. *Journal of Professional Nursing, 29*, March-April, 109–116. https://doi.org/10.1016/j.profnurs.2022.01.002

Nursing & Midwifery Council. (n.d.). Who we are and what we do. https://www.nmc.org.uk/about-us/our-role/

Nursing & Midwifery Council. (2017). The NMC register 2012/13 – 2016/17. https://www.nmc.org.uk/globalassets/sitedocuments/data-reports/nmc-register-2013-2017.pdf

Nursing & Midwifery Council. (2018). *The code: Professional standards of practice and behaviour for nurses, midwives, and nursing associates*. https://www.nmc.org.uk/globalassets/sitedocuments/nmc-publications/nmc-code.pdf

Nursing & Midwifery Council. (2021). The NMC register mid-year update: 1 April–30 September 2021. https://www.nmc.org.uk/globalassets/sitedocuments/data-reports/september-2021/nmc-register-september-2021.pdf

Office for National Statistics. (2019). Population estimates for the UK, England and Wales, Scotland and Northern Ireland. https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates

Organisation for Economic Co-operation and Development. (2016). OECD Reviews of Health Systems: Mexico 2016, OECD Reviews of Health Systems, OECD Publishing https://doi.org/10.1787/9789264230491-en.

Organisation for Economic Co-operation and Development. (2021). Health spending [Indicator]. Retrieved November 16, 2021, from https://data.oecd.org/healthres/health-spending.htm

Schober, M. (2016). *Introduction to advanced nursing practice: An international focus*. Springer International Publishing AG.

Secretaría de Salud. (2017, March 8). Acuerdo por el que se emiten los lineamientos que contienen el procedimiento y los criterios a los que deberán sujetarse los licenciados en Enfermería, así como los pasantes en servicio social de las carreras referidas en los numerales 1 a 5, del artículo 28 Bis, de la Ley General de Salud, para la prescripción de medicamentos. https://dof.gob.mx/nota_detalle.php?codigo=5475523&fecha=08/03/2017

Secretaría de Salud. (2018). *Estado de la enfermería en México 2018*. http://www.cpe.salud.gob.mx/site3/publicaciones/docs/estado_enfermeria_mexico2018.pdf

Secretaría de Salud. (2020). Catálogo de planes y programas de estudio de calidad en educación superior de enfermería. http://www.calidad.salud.gob.mx/site/editorial/docs/catalogo_planes_programas_enfermeria.pdf

World Health Organization. (2021). *Health workforce: Global strategic directions for nursing and midwifery*. https://apps.who.int/gb/ebwha/pdf_files/WHA74/A74_13-en.pdf

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DAI Global LLC provided financial support to carry out research in Mexico under contract number BHP154-SCA.