



Nurse competence development through professional entitlements in the Skill-Mix Model in rural areas – a review of national and international practices

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Abstract

Introduction and Objective. In the light of the growing complexity of healthcare delivery, it is important to emphasise the need for efficient and safe nursing care underpinned by high professional standards. Collaboration is key to preventing problems. The aim of the study is to review how nurses could improve their roles, and examines what is being done nationally and internationally, as well as in rural areas where access to healthcare is often more challenging.

Review Methods. Evidence synthesis was based on narrative analysis and a state-of-the-art review, to summarise the field of nursing competences. As the article is narrative, a systematic review and study quality assessment were not used.

Brief description of the state of knowledge. In recent decades, nursing has evolved from being auxiliary staff to becoming an autonomous profession, with nurses now being recognised as independent medical professionals. The Advanced Practice Nurse (APN) pathway is now a desirable career option in over 70 countries. In response to an increase in areas with limited access to healthcare and a shortage of nursing staff, a model of intersecting competencies is being implemented ('skill-mix'), offering nurses greater autonomy and an expanded skillset, including leadership.

Summary. The effective utilization of the competencies of different healthcare professionals requires careful categorization of patients' health-related problems and alignment with the available medical staff. The key to optimising the potential of nursing staff lies in acknowledging their pivotal role within the healthcare system. By leveraging their expertise in investigating and assessing patient health, the quality of treatment and boosting of staff morale can be enhanced, and ensure patient satisfaction.

Key words

medical staff, medical professionals, Nurse, Competence, Skill-Mix, healthcare systems, medical deserts

INTRODUCTION

Nearly 30% of the European population live in rural areas. It is estimated that approximately 137 million Europeans are rural inhabitants. In the case of the Polish population, this number is about 15,189,000, which is less than 60% of rural inhabitants among the total number of 37,402,000 Poles [37,843,188 on 2 May 2026] Rural areas constitute more than 80% of the territory of the European Union, whereas in Poland they occupy approximately 93% of the country's territory [1–3]. The fundamental challenge for the social policy of the European countries, including Poland, is a systematic population decline which has lasted for several decades – decline that is especially pronounced in peripheral rural areas [4]. The European Commission defined regions

experiencing depopulation as those with a population decline of more than 7.5 inhabitants per 1,000 per year (European Commission, 2023) [5]. In Poland during 2012–2023, the rate of natural increase (per 1,000 population) declined, reaching in 2023 the value of -3.6 [6]. In 2024, both rural and urban areas experienced the occurrence of natural population loss which, in Polish rural areas, was on the level of -3.3‰, while in urban areas this level was -4.8‰. This means that the number of deaths exceeded the number of live births in both rural and urban areas; however, in urban areas this process was considerably more intense: -96,800 in urban areas vs. -38,900 in rural areas [6].

Due to the complex processes associated with the phenomenon of suburbanization and metropolitan expansion, the above-presented data do not constitute a simple demographic analysis. Since 2000, as a result of internal migrations, rural areas were gaining new residents, while cities were losing them. However, these changes are not uniform in nature, because the highest

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share of the population living in rural areas was noted in the most urbanized province (Katowice Province in south-west Poland), whereas the lowest percentage of the rural population was observed in the Rzeszów Province (58.9%), in south-eastern Poland [7]. In addition, rural areas located in city commuting zones recorded strong growth (+8.5%), while the areas outside these zones recorded a population decline by 0.4%. Similarly, cities and areas with medium population density within the commuting zones recorded the fastest growth (+11%), compared to the substantially lower growth by 5.3% in the case of areas outside these zones [8]. The demographic prognoses for 2060 indicate an intensification of the depopulation processes and population decline in Poland down to the level of approximately 30.4 million, and in a negative scenario, even down to 26.7 million [7]. Life in rural areas largely depends on access to high-quality public services and infrastructure; however, the Department of Analysis and Strategy within the Polish Ministry of Health forecasts that the phenomenon of suburbanization will cause a change in the location of Public Health Centres (PHCs), which should be located closest to the patients they serve. Considering the escalation of the depopulation process in rural areas, the change may also affect other services requiring frequent interaction with patient, such as day care for the elderly [6]. The change observed in the structure of the population in Europe and in Poland is also of great importance for the labour market, causing a decrease in the potential of people capable of undertaking employment, with a simultaneous increase in the percentage of population at retirement age [9].

Contemporary health care systems face many challenges, such as population ageing, the growing complexity of medical services, changing social demands, and a decreasing number of health care staff [1]. Poland is among the European countries with the lowest number of health care staff, with 5.7 nurses per 1,000 population, compared to 8.5 per 1,000 in the whole EU. The issue of age is also a challenge because nearly 75% of nurses in Poland are aged over 50, while for comparison, the percentage of physicians in the same age group does not exceed 20%. The staffing problem, particularly visible in Poland, also concerns the number of graduates of medical and nursing studies which is persistently substantially lower than the EU average [10].

Results of public consultations carried out among Europeans, used while developing 'A long-term Vision for the EU's Rural Areas', indicated concerns related with the erosion of the rural infrastructure and provision of services, including those associated with the deterioration of access to health care. Attention was also drawn to the fact that longer distances, lower population density and dispersion of settlements, hinder both the provision of services and access to these services. However, in the strategy it was emphasized that the key issue is ensuring a decent standard of living for all citizens and across all regions, including the most remote rural areas and outermost regions. In consequence, the provision of health care may be considered as a problem of a territorial nature, because balancing costs, quality and availability of services requires taking into account spatial conditions, including population density and distances [1, 10, 11].

In view of these challenges, the strengthening of professional competences of nurses becomes particularly important because their role in the provision of comprehensive, integrated and patient-focused care is constantly expanding.

This development also aligns with the United Nations' commitment to ensure universal and equal access to health care [12–15]. Given the increasing complexity of health care delivery, the importance of efficient and safe nursing care, grounded in high levels of professional competence, cannot be overstated. Equally essential is effective collaboration among health care professionals. A cooperation model based on mutual trust, clearly defined roles and professional autonomy may help prevent the emergence of 'medical deserts', and enhance the resilience of health care systems in times of crisis [16].

The skill-mix strategy assumes that an effective use of competences of various professional groups representing the health care system requires careful categorization of health problems, and adapting the way they are solved to the competences of the available medical staff. This means the combination of roles, competences, skills and actions which allows better matching of staff resources to the health needs of the population. In the face of contemporary demographic and epidemiological challenges, this strategy is of crucial importance for optimization of the potential of the contemporary health care system, regarding both the provision of proper access to health services, and an effective allocation of human resources and their competences [17, 18].

OBJECTIVE

The aim of the study is a review of the processes underlying the development of expertise in nursing in relation with cyclical expansion of professional competences. The analysis included national initiatives, as well as international trends related with these processes, with particular consideration of rural areas, the specific character of which causes that strengthening of professional competences of nurses is of particular importance in terms of accessibility and continuity of health care.

REVIEW METHODS

The study was conducted using a narrative literature review aimed at critical integration of available scientific evidence concerning professional competences of nurses. An information search was carried out by means of non-systematic search strategies in commonly used biomedical databases, such as: PubMed, Scopus, and Google Scholar, prioritizing publications important for nursing practice in rural areas. In order to identify proper sources, a fragmentary search strategy was applied also with respect to a review of legal regulations concerning the education of nurses. Publications pertaining to the professional competences of nurses in health care systems were searched for using the following key words: 'nursing', 'development of practice', 'professional competences', 'Poland', 'Europe', 'rural area', 'urban area'. The final search was carried out on 17 July 2025. Articles published in languages other than Polish and English were excluded. In addition, reference lists of selected articles were reviewed in order to identify further important studies and reports, which had not been considered during the preliminary search.

Taking into account a comprehensive discussion on this problem and importance of the national regulatory

framework, an additional search was also carried out using the Google search engine which took into consideration 'grey literature' concerning vocational publications and reports. The synthesis of evidence was performed based on narrative analysis with an approach including a state-of-the-art review, aimed at summing-up the present state of knowledge in the field of the development of nursing competences. The state-of-the-art review focused on answers to the following questions: *At what stage are we currently in our understanding?; How did we get to this point and where should we be heading?* In addition, in accordance to the narrative nature of the article, neither a systematic review protocol was used, nor was a formal assessment of methodological quality of the included studies performed [19].

DESCRIPTION OF THE STATE OF KNOWLEDGE

Acquisition of rights – an historical overview. Over the past decades, the nursing profession has undergone a profound transformation – from the role of auxiliary staff to that of an autonomous profession, regulated by law and aligned with European educational standards [20, 21]. A pivotal moment in the Polish health care system came in 1989, when the democratic transition initiated reforms in the education and training of nurses. Constant updating of professional knowledge and skills and supervision over the exercising of the profession are important elements of the development of professional care and, at the same time, create the basis for the development of competences and strengthening of the professional autonomy of nurses and midwives. Two milestones that significantly advanced the professional autonomy of nurses and midwives were the Act on the Professional Self-Government of Nurses and Midwives (1991) and the Act on the Professions of Nurse and Midwife (1996) [20, 21]. Based on the Act of 19 April 1991, a professional self-government was established which became the main body representing the representatives of this profession and supervising its proper exercising. However, issues of independence and distinctiveness of the nursing and midwifery professions were clarified in the Act of 5 July 1996, in accordance with which nurses and midwives began to be treated as persons participating in the treatment process – 'the professions of a nurse and midwife are independent professions'. Nurses obtained the right to provide prophylactic, diagnostic, treatment and rehabilitation services independently, without the necessity to obtain a doctor's order [22]. A major driver of further change and the expansion of professional entitlements was the adoption of the Bologna Declaration, which standardized academic qualifications across the European Community. In this context, the university-led initiative *Tuning Educational Structures in Europe* played an important role in the professionalization of nursing. The Tuning project developed a methodology for the design, implementation, and evaluation of curricula for all Bologna process cycles, thereby contributing to the harmonization of nursing education [20, 23–26].

The Act of 15 July 2011 on profession of nurse and midwife is the national legal act currently specifying the formal requirements necessary for a nurse to obtain professional competences. The recognition of nurses and midwives as independent health care workers is an important step

towards professional autonomy reflecting the model of combining skills and overlapping competences. The Act not only maintained previously adopted assumptions, but also expanded the competences and scope of decision-making for nurses within the scope of professional activities. This is especially important because such actions favour the maintenance of continuity of care and improvement in availability of health services where staff shortages are the greatest. In such conditions, nurses become the basic link ensuring continuity of care, taking over increasingly important tasks previously reserved exclusively for physicians and, at the same time, represent one of the key elements for the implementation of sustainable development goals related with health [26–31] (Fig. 1).

Emergency medical procedures. In response to being aware of the risk of the escalation of so-called medical deserts and the related shortage of nursing staff, attempts to implement a model of intersecting competencies *skill-mix* also concerned extension of the competences of nurses regarding the right to perform medical emergency activities. The nurse has become the leader of the mobile team and a core member of the specialist team, which strengthened professional independence and emphasized professionalism of actions undertaken towards individuals in life-threatening conditions [32–34]. Expanding the role of nurses in this area is particularly important for rural populations and those distant from specialist facilities. As highlighted in the study, the improvement of their competences in the field of emergency nursing is of key importance for the provision of health care in rural and remote areas. Riley et al., indicated that as a part of medical emergency operations nurses often play above-average roles. These nurses often constitute the first link in the medical response (first responders), and sometimes are the only professionals providing immediate intervention. Their professional practice is characterized by greater autonomy and an expanded scope of competences, an important dimension of which is also leadership, both formal and informal. Importantly, studies show that the expansion of knowledge and clinical skills of nurses performing medical emergency activities increases the availability of the health care system resources, and improves the availability of care in remote and less connected communities. This need is especially clearly observed in rural areas, where a disproportionately higher percentage of seniors burdened with multimorbidity generates an increased demand for medical services. Multimorbidity is associated with more frequent use of medical services, as well as the limited mobility of patients, which additionally hinders an access to care. In this context, adequate provision of nursing resources, including the development of competences in the field of medical emergency procedures, may constitute an important element in reducing health inequalities in rural areas [35–37].

Drug prescription. The subsequent reform of health care, and groundbreaking for the nursing staff, was the authorization to prescribe drugs, first introduced in 1969 in the USA, and nearly half-a-century later, also in Poland [38]. In Europe, the earliest regulations authorizing nurses to prescribe medications appeared in the 1990s in the United Kingdom and Sweden, followed shortly thereafter by Ireland. In Poland, the adoption of the skill-mix strategy in this area took place in 2016, marking an important step toward expanding the

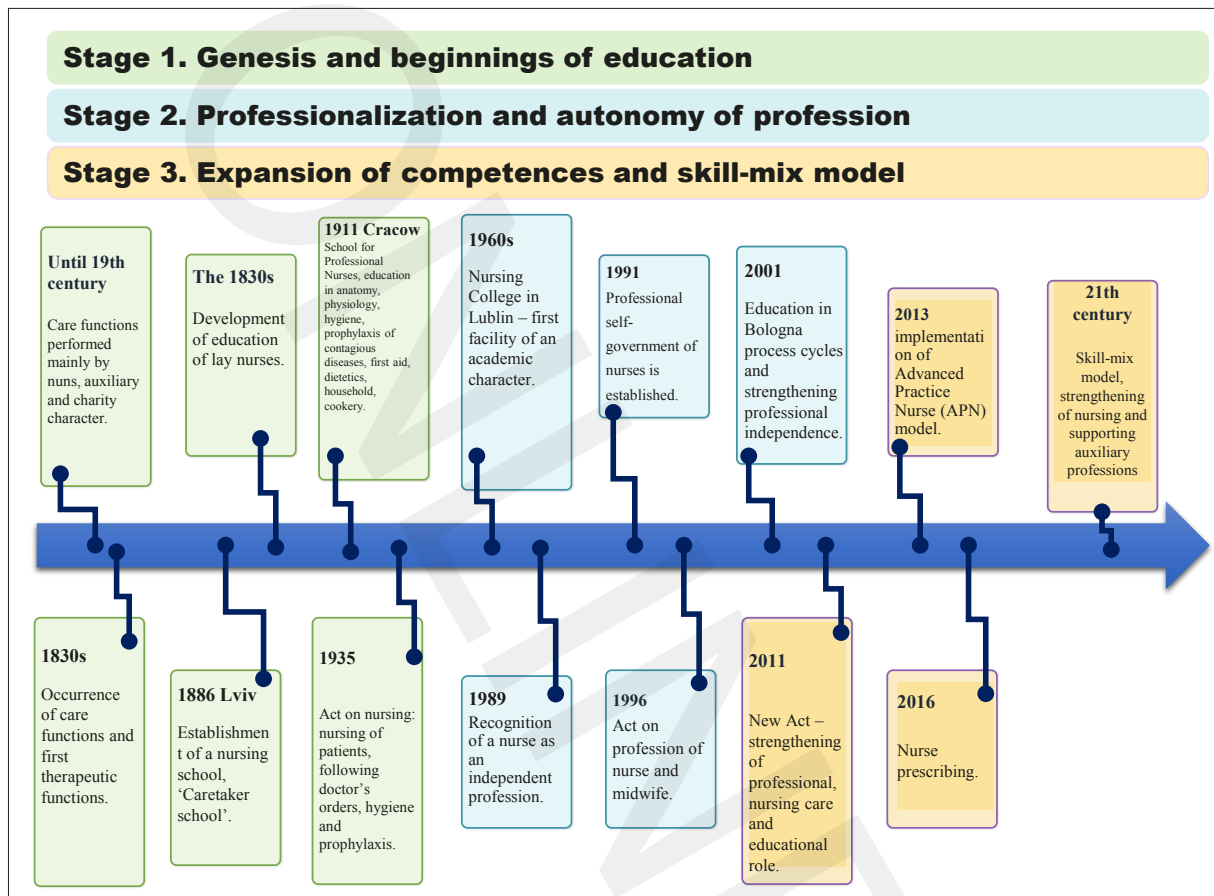


Figure 1. Acquisition of Rights – an historical overview.

professional scope of nursing [32, 38]. The legislator introduced the possibility to make autonomous decisions regarding drug prescription, medical devices, or foodstuffs intended for particular nutritional uses, understood as an element of independent provision of prophylactic, diagnostic, therapeutic and rehabilitation services [32].

According to the International Council of Nurses (ICN), nurse prescribing is currently authorized in 45 countries across all regions of the World Health Organization (WHO). Within the WHO European Region, prescribing rights for nurses have been formally established in 14 countries: Estonia, Finland, Iceland, Ireland, The Netherlands, Norway, Poland, Sweden, United Kingdom, France, Cyprus, Spain, Denmark, and Switzerland [5, 32, 39 -41].

The first legal regulations concerning nurse prescribing were introduced in the United Kingdom in 1992 with the adoption of the Medicinal Products: Prescription by Nurses Act. This legislation also established two distinct models of nurse prescribing [38]. The independent model authorizes nurses to prescribe medications on their own initiative, including first-time prescriptions. In contrast, the supplementary model permits nurses to issue follow-up prescriptions after a physician has made the diagnosis and established the treatment plan. Similar regulatory approaches have been adopted elsewhere in Europe. In Finland, Germany, and Switzerland, nurses may act autonomously without direct physician supervision in areas such as preliminary patient assessment, limited prescribing of medications, and therapeutic interventions, monitoring of health status, support for patients with chronic conditions (e.g., diabetes,

asthma, heart failure, and mental health disorders), and the management of complex diseases, including oncological and infectious conditions [44]. In Sweden, nurse prescribing was introduced in 1994. Approximately two-thirds of medications prescribed by community nurses are non-prescription drugs, while the remaining one-third require a prescription. Registered nurses who have completed courses in pharmacology and pathology are authorized to prescribe a limited range of drugs across 15 therapeutic areas, including oral cavity diseases, throat and gastrointestinal disorders, nutritional problems, and wound care (Swedish National Board of Health and Welfare, 2015) [45]. In Denmark, prescribing rights are more limited and typically exercised through so-called local frame prescriptions. These are most common in hospital settings and require prior physician approval. In primary care, decisions about establishing such prescriptions are made jointly by physicians and nurses (The Danish Ministry of Health, 2009) [43]. In Ireland, nurses registered in the Nursing and Midwifery Board of Ireland (NMBI) system first obtained prescribing rights in 2008, and to qualify, nurses must complete a postgraduate programme including 96 hours of clinical training. Once authorization is granted, however, there is no requirement for ongoing professional development in prescribing [46–49]. Both Finland and Spain apply a mixed model that combines initial (vaccines, contraceptives) and follow-up prescribing (chronic and acute conditions) [50]. In Finland, nurses were granted prescribing rights in 2012. Training follows the European Credit Transfer and Accumulation System (ECTS) and the European Qualifications Framework (EQF

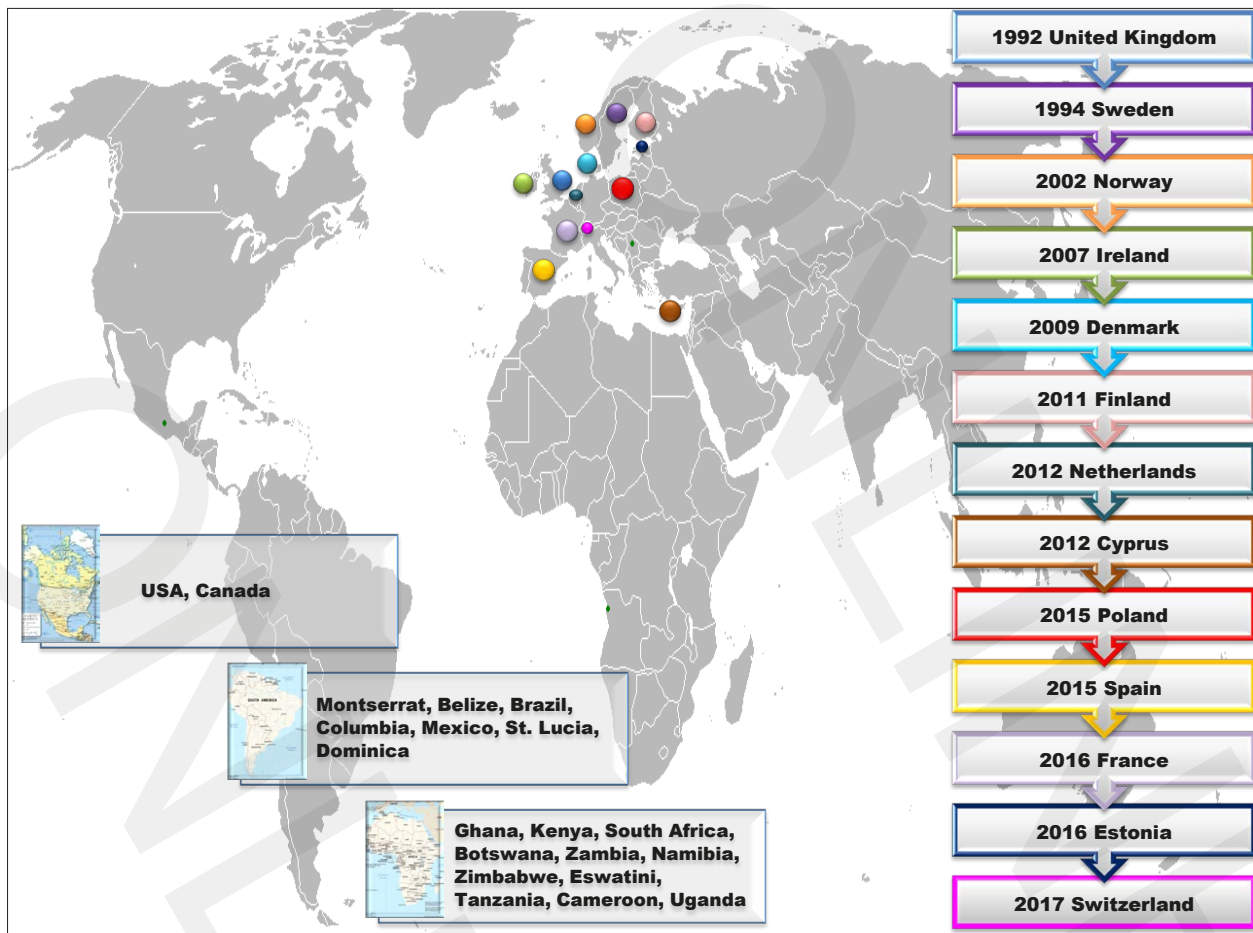


Figure 2. Nurse medication prescribing.

Source: author's own elaboration based on: 1) ICN – Guidelines on prescriptive authority for nurses [42]; 2) OECD – Nurses in advanced roles in primary care: Policy levels for implementation [43]; 3) OECD – Advanced practice nursing in primary care in OECD countries: Recent developments and persisting implementation challenges [5]

level 7), and includes preparation for independent clinical decision-making [40, 51]. In Spain, prescribing rights were incorporated into the undergraduate curriculum in 2008, and subsequently regulated by Royal Decree-Law (RD) 954/2015 and RD 1302/2018. These regulations distinguish three categories of nurse prescribing: 1) autonomous prescribing of medical products and non-prescription drugs (e.g., paracetamol); 2) collaborative prescribing, based on prior diagnosis and treatment planning by a physician (e.g., antihypertensive medications); and 3) group instructions defined by protocols issued by the Ministry of Health. Under these provisions, nurses may prescribe medications after at least one year of professional practice, or earlier if they have completed additional prescribing training. At present, nurse prescribing in Spain is applied primarily in primary health care centres [52, 53].

A significant milestone in the advancement of both Antimicrobial Stewardship (AMS) and nursing practice was the introduction of legal regulations allowing nurses to prescribe medications for uncomplicated urinary tract infections in women [54, 55]. In France, the Public Health Code authorizes, and in some cases, obliges nurses to perform specified activities, either under physician instruction or on their own initiative. The decree of March 2012 extended prescribing rights to registered nurses under the condition that physicians are informed of any prescriptions issued.

Nurses are required to cooperate with the attending physician, and all prescriptions must adhere to established therapeutic protocols [56–58]. In Estonia, family nurses are granted limited prescribing rights under an amendment to the Act on the Organization of Health Services. Their prescribing authority is restricted mainly to medications for chronic conditions that have already been initiated by a family doctor. To obtain this entitlement, nurses must complete training in clinical pharmacology. Prescriptions issued by family nurses are also subject to regular review [59, 60]. In Iceland, legal regulations granting nurses and midwives prescribing rights came into effect in January 2021. Preparatory steps included the launch, in January 2020, of specialized courses in primary health care at the Faculty of Nursing and Midwifery, University of Iceland, targeted at second-cycle nursing students, registered nurses, midwifery students, and registered midwives. Notably, since December 2018, nurses in Iceland had already been entitled to prescribe hormonal contraceptives [39]. An illustrative case is that of The Netherlands, where limited prescribing rights are granted to nurses specializing in diabetology, pulmonology, or oncology. These entitlements apply only to nurses holding a Master's Degree in advanced nursing practice, or to registered nurses with specialization in the care of patients with diabetes, cancer, or asthma/COPD. Under Dutch law, nurses possess jurisdictional authority to

prescribe medications independently, but only under specified conditions related to education level, type of medication, and field of specialization. Importantly, prescriptions may be issued only after a physician has established the diagnosis. In Belgium, restrictions are even stricter. Nurses are authorized to provide non-pharmacological consultations and advice regarding over-the-counter medications, but they do not have the right to prescribe. In Norway, public health nurses play a central role in children's health centres, schools, and youth health clinics; their responsibilities include providing general health consultations, with a particular focus on sexual health. They are legally authorized to prescribe contraceptives to all females over the age of 16 [50, 61–63].

By contrast, in Italy, nurse prescribing remains absent. According to Legislative Decree No. 219 of 24 April 2006 (Chapter VI), only physicians are entitled to issue prescriptions. Although the National Federation of Nursing Professionals has appealed to the Italian government to create new advanced nursing practice training profiles that would expand nursing roles and responsibilities to include prescribing over-the-counter medications and renewing prescriptions previously issued by doctors, such a reform has not yet been implemented [50, 64, 65].

In the face of the growing needs of society and organizational challenges of the health care system, it becomes necessary to implement new models of care which would provide patients continuous access to prescription drugs. Nursing is a key element of these solutions, playing a crucial role in the provision of the effectiveness and availability of contemporary health care [53, 66].

Competence overlap involving nurses 'skill-mix'. Nurses are increasingly assuming responsibilities traditionally associated with physicians, pharmacists, and other health care professionals, thereby playing a progressively important role in modern health care systems. Research indicates that strong professional commitment and loyalty to the employing organization enhance nurses' prestige. Recognition of their essential role also supports better utilization of their skills in assessing and monitoring the health status of patients. This, in turn, contributes to higher levels of satisfaction among nurses, patients, and health care providers alike [49–51].

The variety of the programmes of complex patient care, such as, e.g. POZ PLUS, resulted in the necessity to introduce a new profession of a health care coordinator [33, 67–70]. However, in Polish conditions, due to the lack of education in this new role, the function of coordinator is performed mainly by nurses. The COVID-19 pandemic brought to light the need for increasing the autonomy of medical professions other than a physician. An example is the implementation of the act on other medical professions, based on which the Central Register of Persons Authorized to Practice a Medical Profession was established. The establishment of new professional teams concerned the regulation of 15 medical professions applicable in the Polish health care system. Strengthening of the role of nurses and midwives during and after the COVID-19 pandemic concerned the expansion of competences in the area of drug prescribing [66, 71, 72].

Expanding the scope of practice for nurses and physician assistants also makes these professions more attractive. As the primary point of contact for many patients, nurses play a central role in ensuring that health needs are met. By providing patient-centred care, they help shape an

organizational culture that prioritizes patient well-being. In addition, nurses can serve as advocates for patient safety, fostering a safety culture within their organizations and encouraging colleagues to follow suit. They should be empowered to make decisions concerning patient care and safety and to report harmful conditions or uncertainties. In this way, they can act as role models for other members of the health care team, emphasizing the importance of patient safety and leading by example [73, 74].

APN advanced practice nurse (APN). In the context of nursing professional autonomy, the development of the Advanced Practice Nurse (APN) role has emerged as a response to systemic challenges such as physician shortages, rising demand for health care services, and the need to improve access to treatment [75]. The APN pathway is now recognized as a desirable career trajectory in more than 70 countries worldwide. Evidence from a review study published a decade ago confirmed that treatments provided by highly qualified nurses are not only safe for patients, but also bring economic benefits to health care systems. The APN model was first introduced in Poland at the Specialized Hospital in Wejherowo, northern Poland, where the inaugural APN position was established to provide care for patients with chronic disease and pressure ulcers. Subsequent efforts by the Polish Nurses Association to promote the APN model led to curricular changes in second-cycle nursing programmes beginning in 2018 which, in turn, facilitated the introduction of nurse medication prescription rights [76].

Within the priorities of the Polish Presidency of the Council of the European Union (EU), together with the World Health Organization (WHO) and the European Commission, The European Nursing Action project has been launched which assumes the expansion of professional competences of nursing staff. This international initiative which is a response to the problem of shortage of nursing staff in the European Union and associated countries. This project assumes not only increasing the number of nurses, but also expanding their professional competences, integrating their role with a modern image of the health care system. This is especially important in the rural areas, where primary health care teams more frequently require a wider scope of practice, competences in the area of emergency and pre-hospital care, and undertaking more advanced professional roles [77–79].

Currently, a special emphasis is placed on the strengthening of nursing competences according to the recommendations by the World Health Organization and the Directive 2013/55/UE of the European Parliament and of the Council. Nurses responsible for general care are expected to possess qualifications ensuring their ability to act independently, cooperation within interdisciplinary teams, promotion of health promoting life style, responding to emergency situations and constant evaluation, and improvement of the quality of care. Sustained development of nursing competencies is essential not only for delivering high – quality care to patients but also for shaping effective health policy worldwide, as outlined in the Global Strategic Directions for Nursing and Midwifery 2021–2025. In addition, on the European map of implementation of these directions, an uneven distribution of staff between rural and urban areas was emphasized, as well as the need for strengthening of the employment of nurses in primary health care and public health, implementation of actions conducive to recruiting and

retaining staff in rural and remote areas, which additionally justifies special importance of the development of nursing competences in these environments [42, 80–82].

Benefits and potential threats. However, several barriers may hinder the effective implementation of these changes. The lack of clear regulations regarding the scope of nursing competencies and the financing of such roles creates uncertainty. Patients may also be unaware of the entitlements of specialist nurses or physician assistants, leading to doubts about the quality of care provided. Moreover, when nurses lack extended competencies or when certain tasks still require physician oversight, the intended benefits may not materialize – an issue that is particularly problematic in underserved regions [83]. This situation can result in excessive workloads for some nurses, ultimately compromising the quality of care delivered. The successful implementation of the ‘skill-mix’ model requires comprehensive organizational change. Effective use of the competencies of various professionals depends on the accurate categorization of patients’ health problems and appropriate alignment with the available staff [18, 84]. In many institutions, however, instead of expanding the health care workforce, the expectation is that nurses will absorb additional responsibilities. This approach risks work overload and deterioration in the quality of patient care. Research shows that nurses spend approximately 10% of their working time on non-nursing duties – such as administrative tasks, cleaning, or training nursing students – which could be delegated to auxiliary staff, provided that such personnel are employed [85–87]. This problem is particularly evident in health care systems facing chronic staff shortages, where additional duties are not offset by increased staffing levels or remuneration. Overburdening nurses with excessive workloads and time pressures may lead to burnout, higher staff turnover, and decreased job satisfaction, ultimately undermining the resilience of the health care system as a whole [88]. At the same time, rising public awareness of health issues fuels growing societal expectations toward health care services. Given the substantial evolution of nursing knowledge, practice, roles, and effective utilization of professional competencies, requires careful alignment of patient needs with the appropriate health care providers. For these reasons, the effective utilization of the competencies of different health care professionals requires careful categorization of patients’ health-related problems and alignment with the available medical staff [18, 84, 89]. This appears to be particularly important in the context of the risk of excessive workload being placed predominantly on physicians and nurses, especially within primary health care settings.

SUMMARY

In conclusion, it is essential to recognize that, together with the growing complexity of health care services, increasing emphasis must be placed on efficient and safe nursing care founded on a high level of professional expertise. A significant step toward achieving this goal, adopted in many countries, has been the recognition of nurses and midwives as independent medical professionals, thereby reinforcing professional autonomy and embracing the ‘skill-mix’ competence overlap model. Evidence from existing studies further demonstrates that the effectiveness of health care

systems is closely linked to the quality of collaboration among medical staff. Specifically, cooperative models grounded in mutual trust, clearly defined competencies, and professional autonomy, can help prevent the emergence of ‘medical deserts’ and enhance the resilience of health care systems in times of crisis.

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