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Advanced practice nursing in primary care in OECD countries: Recent developments and persisting implementation challenges

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Abstract

This paper reviews recent developments in advanced practice nursing in primary care in OECD countries during and after the pandemic, as a possible solution to address challenges in access, continuity, and efficiency in the delivery of primary care. It first summarises country responses to the module on advanced practice nursing that was included in the 2023 OECD Health System Characteristics survey. It then presents the results of an *ad hoc* data collection on the number of advanced practice nurses in those OECD countries for which it was possible to collect these data, focussing in particular on Nurse Practitioners (NPs). The paper also provides an overview of recent developments in advanced practice nursing in five OECD countries that are at different stages in implementing advanced practice nurses in primary care: two countries (United States and Canada) that have a long experience, Australia that has a moderately long experience, and two other countries (France and Italy) that are still in the early phase of implementing more advanced roles for nurses in primary care.

One of the main conclusions of the paper is that the gap between the leading countries and the countries lagging behind in implementing advanced practice nursing in primary care has widened over the past few years, as leading countries have accelerated the use of advanced practice nurses whereas many other countries are still debating the pros and cons of advanced practice nursing or remain in early implementation stage. In those countries that have achieved decisive breakthroughs in new forms of task sharing between general practitioners (GPs) and advanced practice nurses (e.g. NPs), increasing the number of advanced practice nurses is seen as a real opportunity to respond to primary care needs and shortages of GPs and reduce pressures on hospitals. Evidence from these countries shows that advanced practice nurses can play a useful role in providing more timely access to primary care, supporting health promotion and prevention activities, promoting care continuity, and reducing hospital (re-) admissions. The use of advanced practice nurses also often results in higher patient satisfaction as these nurses tend to spend more time with patients and provide more information and counselling. Evaluations do not show any evidence of any negative impact on quality of care and patient safety when such advanced practice nurses are adequately trained.

Résumé

Ce document de travail passe en revue les développements récents sur les infirmiers en pratique avancée dans le domaine des soins primaires dans les pays de l'OCDE durant et après la pandémie, comme solution possible aux défis que posent l'accès, la continuité et l'efficience de la prestation des soins primaires. Il résume tout d'abord les réponses des pays au module sur les pratiques avancées des infirmiers que comportait le questionnaire sur les caractéristiques des systèmes de santé dans les pays de l'OCDE administrés en 2023. Il présente ensuite les résultats d'une collecte de données *ad hoc* sur le nombre d'infirmiers en pratique avancée pour un certain nombre de pays pour lesquels ces chiffres ont pu être collectés, notamment sur les infirmiers praticiens. Ce document fournit également une mise à jour des développements récents sur les infirmiers en pratique avancée pour cinq pays de l'OCDE qui sont à différents stades de développement dans la mise en place de ces nouveaux rôles : deux pays (États-Unis et Canada) qui ont une longue expérience, l'Australie qui a aussi une expérience assez longue, et deux autres pays (France et Italie) qui sont encore dans la phase initiale de mise en place de pratiques avancées des infirmiers dans les soins primaires.

Une des principales conclusions de ce document est que l'écart entre les pays qui sont en avance et ceux qui sont en retard concernant le développement de nouveaux rôles plus avancés des infirmiers dans les soins primaires n'a cessé de s'élargir ces dernières années, alors que les pays qui sont en avance ont accéléré le recours aux infirmiers en pratique avancée tandis que plusieurs autres pays en sont encore à débattre des avantages et désavantages de nouveaux rôles possibles pour les infirmiers ou demeurent encore dans les premiers stades de développement. Dans les pays qui sont parvenu à atteindre des avancées décisives concernant un nouveau partage de tâches entre les médecins généralistes et les infirmiers en pratique avancée (comme les infirmiers praticiens), l'augmentation du nombre d'infirmiers en pratique avancée est vue comme une réelle opportunité pour répondre aux besoins en soins primaires et à la pénurie des médecins généralistes ainsi que pour réduire les pressions sur les hôpitaux. Les évaluations menées dans ces pays montrent que les infirmiers en pratique avancée peuvent jouer un rôle utile pour fournir un accès plus rapide aux soins primaires, contribuer aux activités de promotion de la santé et à la prévention des maladies, promouvoir la continuité des soins, et réduire les admissions (ou réadmissions) à l'hôpital. Les patients affichent souvent un meilleur niveau de satisfaction suite au recours aux infirmiers en pratique avancée parce que ces derniers ont tendance à passer plus de temps avec les patients et à leur fournir plus d'information et de conseils. Ces évaluations ne montrent aucun impact négatif sur la qualité des soins et la sécurité des patients quand ces infirmiers en pratique avancée sont adéquatement formés.

Table of contents

FIGURES

TABLES

In Brief

Key findings

1. This paper reviews recent developments in advance practice nursing (APN) in primary care in OECD countries. It focusses on nurse practitioners (NPs) in those countries that are recognising this category of nurses (e.g. United States, Canada, United Kingdom, Netherlands, and Australia), but also describes the emergence of other categories of nurses taking on new roles such as family and community nurses (FCN) in Italy and other European countries. In several countries, the pandemic has stimulated growing interest in using APN/NPs to address growing primary care needs linked to population ageing and more people living with chronic conditions, although not all countries are moving at the same speed.

2. In those countries that have achieved decisive breakthroughs in new forms of task sharing between primary care doctors (GPs) and nurses, increasing the number of APN/NPs in primary care is seen as a real opportunity to respond to primary care needs and reduce pressures on GPs and hospitals. Evidence from these countries shows that APN/NPs can play a useful role in providing more timely access to primary care, promoting care continuity, and reducing hospital (re-) admissions, and often result in higher patient satisfaction as these nurses tend to spend more time with patients and provide more information and counselling. There is no evidence of any negative impact on quality of care and patient safety when such APN/NPs are adequately trained (usually at a master's degree level).

3. The gap between the frontrunner countries and the countries lagging behind in implementing APN roles in primary care has widened over the past few years, as leading countries have accelerated the growth of their APN/NP workforce whereas many other countries are still debating the pros and cons of APN or remain in the early stage of implementation. In the United States and Canada where the experience with NPs started nearly 60 years ago, NPs are now generally well accepted and integrated in primary care, and their number has increased rapidly in recent years to fill persisting gaps in access to primary care. Overall, the number of NPs more than doubled in the United States and Canada over the past decade. In 2022, NPs represented over 8% of all registered nurses in the United States in 2022 and about 3% in Canada. Other countries with relatively long experience with APN/NPs in primary care have also accelerated the growth of the NP workforce over the past decade (e.g. Australia, Ireland, Netherlands and New Zealand), although these NPs still only represent a relatively small proportion of all nurses. Some European countries, such as France and Italy, have only recently started to develop new APN roles in primary care and are still facing various "start-up" implementation issues, but there is a potential for substantial growth if demand side and supply side issues can be addressed in tandem.

4. Earlier OECD work had identified that the main barriers and policy levers to enable the implementation of APNs in primary care are fairly similar across countries. These include the need to: i) overcome the initial opposition from certain stakeholders (notably the medical workforce); ii) address any outdated legislative and regulatory barriers that unnecessarily restrict the full scope-of-practice of nurses with more advanced education and training; iii) make necessary adjustments to payment and employment systems to appropriately recognise and integrate new APN roles; and iv) have strong leadership to promote the take-up of new APNs in the workplace (Maier et al., 2017).

5. The results from the 2023 OECD Health System Characteristics survey indicate that the most important reason for introducing or extending the scope of practice of APN/NPs in recent years was not to respond directly to the COVID-19 pandemic, yet most countries reported that the pandemic contributed to expanding nursing roles. APN/NPs were mobilised during the pandemic to respond to the healthcare needs arising from the pandemic itself, but also to respond to the ongoing healthcare needs of people with chronic conditions and the rest of the population. Some regulatory restrictions to the scope of practice of nurses were lifted at least temporarily to allow APN/NPs to maximise their contribution to the pandemic response. Nearly all countries allowed APN/NPs to administer COVID-19 vaccinations, which in some countries required lifting some initial restrictions. Many countries also expanded the scope for APN/NPs to provide teleconsultations (e.g. Australia, Estonia, Finland, Lithuania, Spain and United Kingdom), although APN/NPs were not allowed to carry out these activities in other countries.

Policy implications

6. Countries are facing different policy issues and challenges in the implementation of APNs depending on the stage of development and integration of these nurses in their health systems.

7. **Harmonising regulations**: In federal countries such as Australia, Canada and the United States where APN/NPs have been practicing for a long time, a persisting issue is to harmonise legislations and regulations across different jurisdictions to allow APN/NPs to have the same scope of practice wherever they work in the country.

8. **Funding education and training programmes**: In countries such as Canada where the NP role is well-established and increasingly recognised as part of the solution to address primary care needs, a key challenge is to increase quickly the supply of NPs to respond to growing demand. This calls for increasing the pool of students applying and admitted in master's degree programmes required to be recognised as NPs. Some other countries such as Italy that have a much more recent experience in promoting new roles for nurses in primary care (through the family and community nurses model) also need to quickly increase the supply of these nurses to meet the ambitious goal set out in recent primary care reform proposals, in a difficult context of a general shortage of nurses. In Australia where the emphasis in NP training has historically been mainly on providing acute care in hospitals, a new priority is to strengthen education programmes for primary care.

9. **Funding new positions or adjusting payment systems to absorb new APN graduates**: In countries that have only recently aimed to promote a greater use of APN/NPs in primary care such as France, the main issue does not relate so much to the supply of nurses with advanced education and training but to the demand and creating a sufficient number of posts to absorb new APN graduates. Barriers to effective employment include a lack of new positions in public or private primary care settings. For self-employed APNs paid fee-for-services, if GP referrals are required first, a lack of patient referrals results in a lack of activities and income. Even in some countries that have a long experience with NPs such as Australia and the United States, the growth in self-employed NPs is limited by a lack of reimbursement of some activities in private health plans.

10. **Re-designing primary care delivery models towards multidisciplinary teams**: In most countries, both payment systems and work organisation in primary care need to be re-designed to remove disincentives and promote the emergence of multidisciplinary teams and a more effective task sharing between doctors, nurses, and other providers to allow them to work to their full scope of practice. In Canada, Family Health Teams, including GPs, NPs and registered nurses, increasingly work together to provide primary care. Italy and other countries are also following a similar approach.

1. Introduction

11. The COVID-19 pandemic added urgency to addressing long-standing pressures on health systems related to population ageing and more complex and chronic healthcare needs, while at the same time highlighting persisting or growing access issues to primary care related to shortages of primary care physicians (GPs/family doctors). In some countries (but not all), the pandemic served as an eye opener for policymakers and the general public to recognise the important role that advanced practice nurses (APNs) can play to address a significant part of the primary care needs of the population.

12. However, the movement towards more advanced nurse practice roles in primary care is not new and started nearly 60 years ago in the United States with the introduction of the first nurse practitioners (NPs) in the mid-1960s in some States. Canada also started to use NPs in the mid-1960s in response to shortages of GPs in rural and remote areas. In Europe, the United Kingdom started to use NPs and other APNs in the early 1980s, and other countries followed such as the Netherlands in 1997, Ireland in 2001 and Finland in 2003. In the Pacific region, Australia introduced APN roles in 2000 and New Zealand in 2001. In its State of the World's Nursing Report 2020, WHO identified that 78 countries around the world had APNs, of which clinical nurse specialists (CNS) and nurse practitioners (NPs) are the most common (Thomas & Rowles, 2023; WHO, 2020; Ziegler et al., 2023).

13. However, many OECD and non-OECD countries have not implemented yet or are still in the early stages of implementing APN roles in primary care. In Europe, a recent review found that most EU countries are still at an early stage in introducing APN education and expanding the scopes of practice, while most non-EU countries have at most certain categories of specialist nurses because they do not usually yet require a university education for nurses that would enable more APN education (WHO Regional Office for Europe, 2023)

14. It is not easy to define precisely what is meant by "advanced practice nursing" and who is an "advanced practice nurse" as this term encompasses a large variety of educational requirements, roles, practices, and titles. A recent review by the European Federation of Nurses pointed out that the definition, recognition, regulation, and education of advanced practice nursing vary significantly across Europe (De Raeve et al., 2023).

15. The International Council of Nurses (ICN) has proposed the following definition of advanced practice nurses and nurse practitioners:

- "An Advanced Practice Nurse (APN) is a generalist or specialised nurse who has acquired, through additional graduate education (minimum of a master's degree), the expert knowledge base, complex decision-making skills and clinical competencies for Advanced Nursing Practice, the characteristics of which are shaped by the context in which they are credentialed to practice. The two most commonly identified APN roles are clinical nurse specialists (CNS) and nurse practitioners (NPs).
- A Nurse Practitioner (NP) is an Advanced Practice Nurse who integrates clinical skills associated with nursing and medicine in order to assess, diagnose and manage patients in primary healthcare (PHC) settings and acute care populations as well as ongoing care for populations with chronic illness." (Schober et al., 2020)

16. This paper reviews recent developments in advanced practice nursing in primary care in OECD countries over the past few years following the pandemic. It builds on two previous OECD pieces of work that reviewed prior experiences of countries in establishing APN roles in primary care:

- A 2010 OECD Health Working Paper covered the experience of nurses in advanced roles in primary care in 12 OECD and EU countries. It concluded that the development of new nursing roles varied greatly, but in all countries where new APN roles were evaluated, the evaluations showed that using APN/NPs can improve access to primary care and reduce waiting times, and often also result in high patient satisfaction rate as APN/NPs generally tend to spend more time with patients and provide more information and counselling (Delamaire and Lafortune, 2010).
- A 2017 OECD Health Working Paper covered the experience of nurses in advanced roles in primary care in a larger group of countries (37 OECD and EU countries) around the year 2015. It identified persisting barriers and key policy levers to promote the implementation of APN/NPs based on the experience of leading countries (Maier, Aiken and Busse, 2017).

17. This paper is structured in three sections. Section 2 summarises the responses from over half of OECD countries to the module on advanced practice nursing in the 2023 OECD Health System Characteristics survey. It also presents the results from an *ad hoc* data collection on the number of APN/NPs in those OECD countries for which it was possible to collect these data. Section 3 looks more specifically at some of the roles that APN/NPs played during the pandemic to respond to both the management of the pandemic and maintain adequate access to care for the rest of the population. Section 4 reviews recent developments in APN/NP roles in five OECD countries, including some countries that have a long experience with APN/NPs (United States and Canada), another country that also has a fairly long experience (Australia) and two other countries that are still in the early stages of implementing more advanced roles for nurses in primary care (France and Italy).

18. Annex A provides an update on recent evaluations of the impact of advanced practice nurses in primary care in those countries where such evaluations have been conducted, while Annex B provides the different titles that APNs may have in different countries.

2. Recent developments in advanced nursing roles in primary care in OECD countries

19. This section summarises the country responses to the module on advanced practice nursing that was included in the 2023 OECD Health System Characteristics survey. Twenty-seven OECD countries responded to this module: Australia, Austria, Belgium, Canada, Costa Rica, Czechia, Estonia, Finland, France, Germany, Iceland, Israel, Japan, Korea, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Switzerland, United Kingdom, and United States.

20. Seven countries reported that nurses do not work in advanced practice roles in primary care in their country (Belgium, Costa Rica, Germany, Japan, Korea, Latvia and Luxembourg). In Germany, nurses do not presently work in APN roles in primary care, but the job description for a "community health nurse" role is currently being considered.

21. In Luxembourg, nurses do not work in APN roles either, but there are areas of advanced scope of practice for nurses in primary care (e.g. ordering diagnostic tests, referring patients to other professionals, managing patients with chronic conditions), although physician oversight is still required and nurses are not authorised to independently bill patients and/or health insurers for these services. There are plans to strengthen and extend the role of nurses to include a collaborative role in the future. The introduction of advanced nursing practice in Luxembourg will be preceded by an analysis of proportionality and an adaptation of the fee for service tariff.

22. Respondents from the other 20 countries reported that nurses can work in APN roles in primary care. These countries have established a range of advanced practice roles for nurses, along with a variety of titles for nurses working in these roles (Annex B provides an overview of the titles used in each country).

23. Three countries (Austria, Israel and Portugal) indicated that APN roles in primary care in their country were currently limited to pilot or small-scale projects or to some regions. In Austria, an ongoing pilot project is testing the development of new community nursing services within the boundaries of what is authorised under the current nurses law. The overall aim of the project is to establish easily accessible community nursing services in both cities and rural areas, focussing on health promotion and prevention activities, with an initial goal of having at least 150 community nurses taking up these activities by the end of 2024. One of the activities of these nurses is to conduct preventive home visits for people over age 75 before the onset of care needs.

2.1 Main reasons for introducing or expanding the roles of nurses

24. Respondents were asked to identify the main reasons for introducing or expanding advanced roles for nurses in primary care and give an indication of the relative importance of the reason, ranging from least (1) to most (5) important. The results are presented in Table 1.

25. Nearly two thirds of countries that responded to this question (13 of 20 countries) indicated all six suggested reasons were important, albeit with varying levels of importance. Slovenia provided only one main response (promote continuity and quality of care) and Israel provided two main responses (address primary care doctor shortages and promote nurse career progression and retention). All other countries reported that promoting better access to primary care and continuity and quality of care were main reasons for introducing or expanding the roles of nurses. The average rating of importance for each of these factors was greater than 4 on the scale of 5.

26. Three quarters of countries (15 of 20) identified responding to increased demand during COVID-19 as a main reason for introducing or expanding advanced roles for nurses in primary care, but the rating in terms of importance was generally lower than for the other reasons (average rating of 2.1).

2.2 Scope of advanced nursing roles in primary care

27. Figure 1 provides a summary of the responses on the scope of practice of APNs in primary care in 19 of the 20 countries (Slovenia did not respond to these questions) that reported such advanced practice nursing, as well as in Luxembourg that also responded to these questions. Some of the key points from this figure are that:

- The **scope of practice of APN/NPs is generally broader in some countries** such as Australia, Canada, Estonia, Iceland, Norway, the United Kingdom, and the United States, with independent practice permitted across a range of functions. In other countries such as Austria, the Netherlands and Poland, the scope of practice is more restricted, with some functions only permitted under the supervision of a doctor.
- The **ability to independently prescribe medications and diagnostics tests is widespread across countries**, whereas the ability to decide on medical treatments or refer patients to other clinicians is more constrained and has not changed in many countries over the past 3 years. Only a few countries require supervision or collaborative arrangements in prescribing most medications (except for opioids and other controlled substances, which can only be prescribed by doctors).
- APN/NPs in many countries appear to have established scope to **manage patients with chronic conditions**, although nurses in some countries are unable to manage these patients independently and require some level of supervision or collaborative arrangement with a doctor. Fewer countries provide nurses with the ability to manage a wider range of patients regardless of their condition.

Table 1. Main reasons for introducing or expanding roles of nurses in primary care in OECD countries

Country	Address primary care doctor shortages	Promote better access to primary care	Promote continuity and quality of care	Respond to cost-containment pressures	Promote nurse career progression and retention	Respond to increased demand during COVID-19
Australia	1	5	4	2	3	
Austria	4	5	5	5	5	1
Canada	5	5	5	3	2	3
Czechia	5	4	5	4	2	4
Estonia	3	3	4	2	4	1
Finland	2	3	3	2	2	1
France	3	4	3	2	4	3
Iceland	3	5	5	1	3	3
Israel	5				4	
Lithuania	4	5	3	1		2
Netherlands	3	3	4	2	5	1
Norway	2	5	5	1	3	
Poland		5	5	3		3
Portugal	5	5	5	5	2	2
Slovak Republic	5	5	5	4	5	4
Slovenia			3			
Spain	1	5	5	1	3	1
Switzerland	4	3	4	1	4	1
United Kingdom	2	4	5	1	4	1
United States	5	4	4	3	4	
Number of countries reporting this was a reason	**18**	**18**	**19**	**18**	**17**	**15**
Percentage of countries	**90%**	**90%**	**95%**	**90%**	**85%**	**75%**
Average (importance)	**3.4**	**4.3**	**4.3**	**2.4**	**3.5**	**2.1**

Note: The response scale ranged from 1 (least important reason) to 5 (most important reason). Source: 2023 OECD Health System Characteristics Survey

Figure 1. Scope of advanced roles of nurses in primary care in OECD countries (by independence of practice and expansion of scope in last 3 years)

Country	Prescribe medicines	Order diagnostic tests	Decide on treatment	Refer patients to others	Manage any condition	Manage chronic conditions	Provide tele-consults	Provide mobile outreach (1)	Administer COVID tests	Administer COVID vaccines
Australia	◎ ●	◎ ●	◎ ●	◎ ●	◎ ●	◎ ●	◎ ↑	◎ ●	◎ ↑	◎ ↑
Austria	● ●	● ●	● ●	● ●	⊘ ●	⊘ ●	⊘ ●	⊘ ●	⊘ ●	⊘ ●
Canada	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Czechia	⊘ ↑	⊘ ↑	● ●	● ●	● ●	⊘ ↑	⊘ ↑	● ●	⊘ ↑	⊘ ↑
Estonia	◎ ↑	◎ ↑	⊘ ↑	⊘ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑
Finland	◎ ↑	◎ ●	● ●	◎ ●	● ●	⊘ ●	◎ ↑	◎ ↑	◎ ↑	◎ ↑
France	◎ ↑	◎ ↑	● ●	● ●	⊘ ●	◎ ●	● ●	◎ ●	◎ ↑	◎ ↑
Iceland	◎ ↑	◎	⊘	◎	◎	◎	◎	◎	◎	◎
Israel						⊘				◎
Lithuania	◎ ↑	◎ ↑	● ●	⊘ ↑	⊘ ↑	⊘ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑
Luxembourg	● ●	⊘ ●	● ●	⊘ ●	⊘ ●	⊘ ●	● ●	⊘ ●	◎ ↑	⊘ ●
Netherlands	● ●	● ●	● ●	● ●	⊘ ●	⊘ ●	⊘ ●	⊘ ●	● ●	● ●
Norway	◎ ↑	◎ ●	⊘ ●	◎ ↑	◎ ●	◎ ●	◎ ●	◎ ●	◎ ●	◎ ●
Poland	◎ ●	◎ ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●
Portugal	● ●	● ●	● ●	⊘ ●	⊘ ●	⊘ ●	⊘ ↑	● ●	◎ ↑	◎ ↑
Slovak Republic	● ●	◎ ●	● ●	● ●	⊘ ●	● ●	● ●	◎ ●	◎ ●	⊘ ●
Spain	◎ ↑	⊘	●	●	◎ ↑	◎ ↑	◎ ↑	◎	◎ ↑	◎ ↑
Switzerland	⊘ ●	⊘ ●	● ●	⊘ ●	⊘ ●	⊘ ●	⊘ ●		◎ ●	◎ ●
United Kingdom	◎ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑	◎ ↑
United States	◎ ↑	◎ ↑	◎ ↑	◎ ↑	◎	◎	◎		◎	◎

◎ Independent ability ⊘ Ability but not independent ● No ability ↑ Ability expanded in last 3 yrs. ● Ability did not expand in last 3 yrs.

1.Refers to services provided in underserved communities by visiting health professionals, including rural & remote communities where local professionals and health facilities may not be available.

2.3 Evolution in number of advanced practice nurses in selected countries

28. While a growing number of countries have introduced more advanced roles for nurses over the past decade, the actual number of APN/NPs is often still fairly limited in many countries because of implementation issues. This section reviews briefly the availability of data on the number of APN/NPs based on an *ad hoc* data collection. Of the countries in which NPs are recognised as a profession, six countries – Australia, Canada, Ireland, Netherlands, New Zealand and the United States – have routine data on the NP size available from registries or other administrative sources at national or subnational level. The fact that NP is a regulated title in these countries and registration, licensing or endorsement as NP is mandatory, are the primary reasons that data are available. In the United Kingdom, no routinely collected statistics exist on NPs (neither at a UK-wide level nor in England, Northern Ireland, Scotland, or Wales individually). The fact that the title NP per se is not regulated, nor is registration as an NP required with the UK Nursing and Midwifery Council limits data availability.

29. Table 2 provides data on the number of NPs (or equivalent title) in Australia, Canada, Ireland, Netherlands, New Zealand, the United Kingdom (including England, Scotland, and Wales) and the United States. While countries that established NPs earlier generally exhibit higher absolute and relative levels of NPs, all countries have accelerated the growth of the NP workforce relative to the overall registered nurse (RN) workforce over the period 2015-2022.

However, not all these NPs work in primary care. In Canada, only about 38% of NPs were working in primary care in 2022, although this proportion has increased over the past decade (from 31% in 2013). In the Netherlands, only slightly more than 6 % of NPs worked in primary care in 2022. Most of them worked in hospital, mental healthcare, or long-term care facilities (Dankers-de Mari et al., 2023).

Table 2. Total number of NPs and share of all RNs in selected OECD countries, 2015 and 2022

Country	Year NPs introduced	Total NPs		NPs as a % of all RNs	
		(2015) (3)	(2022) (4)	2015 (3)	2022
United States	1965	174,943	258,230	5.6%	8.4%
Canada	1967	4,090	7,113	1.4%	2.8%
United Kingdom (1)					
England	1983	-	3,919	-	1.2%
Scotland		-	726	-	1.6%
Wales		-	246	-	1.2%
Northern Ireland		-	-		-
Netherlands (2)	1997	2,638 (5)	4,568	1.5%	2.3%
Australia	2000	1,214	2,214	0.5%	0.7%
New Zealand	2001	142	620	0.3%	1.0%
Ireland	2001	141	517	0.2%	0.7%

Notes: 1. Advanced nurse practitioner. Data for England, Scotland and Wales is for the year 2020 and based on full time equivalents rather than head counts. 2. Nurse specialists, 3. As presented previously in OECD Health Working Paper No. 98 https://www.oecd-ilibrary.org/social-issues-migration-health/nurses-in-advanced-roles-in-primary-care_a8756593-en, 4. In all countries except NZ (registered NPs) the data refer to employed NPs. 5. Data is for 2016

Sources: United States: https://www.bls.gov/oes/current/oes291171.htm, Canada: https://www.cihi.ca/en/health-workforce, United Kingdom: England and Wales: https://www.rcn.org.uk/Professional-Development/publications/rcn-labour-market-review-2020-uk-pub-009579 Scotland: https://turasdata.nes.nhs.scot/media/njeevxxp/advanced_nurse_practitioners_s2020.xlsx, Netherlands: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10242803/pdf/12913_2023_Article_9568.pdf and https://stats.oecd.org/Index.aspx?DataSetCode=HEALTH_REAC, Australia: https://hwd.health.gov.au/nrmw-dashboards/index.html, New Zealand: file:///C:/Users/ibrownwood/Downloads/Nursing%20Council%20Quarterly%20Data%20Report%20-%20June%202023%20Quarter.pdf, Ireland: https://www.nmbi.ie/NMBI/media/NMBI/NMBI-State-of-the-Register-2022.pdf?ext=.pdf

3. Impact of the pandemic on the scope of practice of advanced practice nurses

30. While the results from the 2023 OECD Health System Characteristics survey indicate that responding directly to the COVID-19 pandemic was not the most important reason for introducing or extending the scope of practice of APN/NPs, most countries nonetheless reported that the pandemic contributed to role expansion. A recent review of how APN/NPs contributed to the pandemic response identified three main activities: 1) addressing health service needs directly related to COVID-19; 2) maintaining access and continuity of care for people with chronic conditions; and 3) facilitating safe access to primary care for the whole population. APN/NPs often had to change their practices to respond to these healthcare needs during the pandemic, notably by delivering a greater volume of health services through teleconsultations and other forms of telehealth. While barriers for APN/NPs to work to their full scope of practice persist in many countries, this recent review highlighted the positive role that the move towards having fewer restrictions to their scope of practice and to exercising leadership during the pandemic played as key facilitators of APN innovations (Ziegler et al., 2023).

31. This section first reviews briefly how APN/NPs contributed directly to the management of the pandemic by participating in COVID-19 vaccination campaigns. It describes some of the barriers that APN/NPs might have faced at the beginning of the vaccination campaigns in some countries, which were eventually lifted in some cases. It then focusses on the role that APN/NPs played in providing teleconsultations and other forms of telehealth during the pandemic for people with chronic conditions, patients recovering from COVID-19 and the general population, and summarises the results of available evaluations on patient outcomes.

3.1 Administering COVID-19 vaccinations

32. Even before the pandemic, many countries were already allowing nurses in general and APN/NPs more specifically to administer regular vaccines such as the vaccine against seasonal influenza for older people and other at-risk groups as well as to provide routine childhood immunizations. During the pandemic, nearly all countries that responded to the OECD Health Systems Characteristics survey reported that APN/NPs were allowed to administer COVID-19 vaccinations (Table 3). However, a few countries responded that nurses were not allowed to provide these vaccinations without the requirement of a physician oversight throughout the pandemic or at least in the early phase. In Australia, NPs were, initially, only allowed to prescribe and administer vaccinations if supervised by a GP or another doctor. After lobbying by the nursing profession, the government relaxed this requirement from mid-2021 (Bouchoucha & Scanlon, 2022).

33. Only the Netherlands and Poland reported that nurses did not in 2023 have the ability to provide these COVID-19 vaccinations.

Table 3. Ability of nurses working in primary care to administer COVID-19 vaccinations

Country	Ability to Administer COVID Vaccinations	Ability to Administer Independently	Ability Expanded in last 3 yrs
Australia	Yes	Yes	Yes
Estonia	Yes	Yes	Yes
Finland	Yes	Yes	Yes
France	Yes	Yes	Yes
Lithuania	Yes	Yes	Yes
Portugal	Yes	Yes	Yes
Spain	Yes	Yes	Yes
United Kingdom	Yes	Yes	Yes
Norway	Yes	Yes	No
Switzerland	Yes	Yes	No
Canada	Yes	Yes	NA
Iceland	Yes	Yes	NA
Israel	Yes	Yes	NA
United States	Yes	Yes	NA
Czechia	Yes	No	Yes
Austria	Yes	No	No
Luxembourg	Yes	No	No
Slovak Republic	Yes	No	No
Netherlands	No	No	No
Poland	No	No	No

Source: National responses to 2023 OECD Health System Characteristics Survey

3.2 Providing teleconsultations and other forms of telehealth

34. The use of telemedicine was quite limited in most OECD countries before the pandemic because of regulatory barriers and hesitancy from patients and providers. Following the onset of the pandemic and the massive disruption in in-person care, governments moved quickly to promote the use of teleconsultations and other forms of telehealth. This played a vital role in maintaining access to care (OECD, 2023).

35. The results from the OECD Health Systems Characteristics survey indicate that in most countries, APN/NPs could provide teleconsultations and in at least six countries this possibility was extended during the pandemic (Australia, Estonia, Finland, Lithuania, Spain and United Kingdom).[1] However, another group of countries reported that APN/NPs were not allowed to carry out teleconsultation activities (France, Luxembourg, Poland and Slovak Republic) (Table 4).

36. The shift from in-person service delivery to telehealth during the pandemic enabled care to be provided without the risk of transmitting COVID-19 to either patients or providers. This was particularly important for patients with chronic diseases who were more at risk of complications from COVID-19 and for cancer patients. During the pandemic, APNs led telehealth or contributed to team-based models of telehealth to support the management of chronic conditions. As shown in Table 5, in New Zealand NPs

[1] The results from the 2022 OECD survey on Telemedicine and COVID-19 (which did not cover exactly the same group of OECD countries as this 2023 survey) also found that six countries had changed their policies since the start of the pandemic to allow nurses and other non-medical staff to perform teleconsultations (Estonia, Germany, Iceland, Luxembourg, Portugal and the United States) (OECD, 2023).

provided support for self-monitoring and medication management for people with heart failure, and the evaluation showed that the services provided were of high quality and safe (McLachlan et al. 2021). APNs in New Zealand also provided 24/7 diabetes management support and developed a guidance document on managing patients with diabetes who had COVID-19 (Waterman, 2020).

Table 4. Ability of nurses working in primary care to provide teleconsultations

Country	Ability to Provide Teleconsultations	Ability to Provide Independently	Ability Expanded in last 3 yrs
Australia	Yes	Yes	Yes
Estonia	Yes	Yes	Yes
Finland	Yes	Yes	Yes
Lithuania	Yes	Yes	Yes
Spain	Yes	Yes	Yes
United Kingdom	Yes	Yes	Yes
Norway	Yes	Yes	No
Canada	Yes	Yes	NA
Iceland	Yes	Yes	NA
United States	Yes	Yes	NA
Czechia	Yes	No	Yes
Portugal	Yes	No	Yes
Austria	Yes	No	No
Netherlands	Yes	No	No
Switzerland	Yes	No	No
France	No	No	No
Luxembourg	No	No	No
Poland	No	No	No
Slovak Republic	No	No	No

Source: National responses to 2023 OECD Health System Characteristics Survey

37. In cancer care, nurse navigators in France played a central role in telemonitoring of cancer patients with COVID-19 who were quarantined at home during the first wave of the pandemic in spring 2020.[2] COVID-related symptoms were monitored on a daily basis, either by the patient via a mobile application or by nurse navigators via telemonitoring. When symptoms worsened, nurse navigators were able to immediately consult an emergency physician to determine the future course of action. No death or admission to intensive care units attributable to COVID-19 were reported among the 130 patients who were monitored during that period, but 17% of patients went to an emergency department at least once and 8% of patients were hospitalized (Ferrua et al., 2021).

38. NPs also played a role in managing COVID-19 patients after hospital discharge in several countries. In the United States, NPs managed COVID-19 patients at home by conducting virtual assessments, collaborating with homecare, and identifying needs for hospitalization (Blazey-Martin et al. 2020). Similarly, in the United Kingdom, APNs provided telephone consultations for patients discharged from hospital with COVID-19. The evaluation showed that this resulted in high levels of patient satisfaction (Lewis et al., 2020). APNs also led pilot programmes in the United States using telehealth to mitigate isolation and loneliness for people with COVID-19 (Ross & Meier, 2021).

[2] Nurse navigators in France and other countries typically play a central role within multidisciplinary teams in cancer care or other types of care in liaising with patients and their families.

39. Prior to the pandemic, telehealth had been used in a variety of ways and not always the most effectively. In federal countries, telehealth services were often not nationally consistent. The pandemic has accelerated the national use of telehealth and virtual care interventions and APNs have adapted to using these strategies effectively to provide patient care and education. As these technologies evolve, further opportunities for APNs to be involved in leading improvements in access to care will arise.

Table 5. Selected telehealth initiatives led by or involving advanced practice nurses during the COVID-19 pandemic

Author	Country	Population	Aim	APN role
Blazey-Martin et al. (2020)	United States	Patients diagnosed with COVID-19 recovering at home	To effectively manage patients with COVID-19 recovering at home	NPs collaborated with PCPs to contact patients. Conducted assessment to optimize at-home care and identify patients requiring inpatient care.
Lewis et al. (2020)	United Kingdom	Adults discharged from hospital with COVID-19	To ensure patients were improving after discharge from hospital and to identify those needing further support	CNS team provided ad hoc telephone consultations for patients who had been discharged from hospital with suspected or confirmed COVID-19.
McLachlan et al. (2021)	New Zealand	Adults diagnosed with heart failure	To provide telemedicine support to patients with heart failure	NPs conducted telemedicine visits, monitoring of heart failure conditions and medication adjustments
Ross and Meier (2021)	United States	Adults in the community with COVID-19	To reduce isolation and improve coping with COVID-19 in the community through use of telehealth listening, education and counselling	APNs developed an 8-week programme including the weekly Google surveys to patients and conducted telehealth visits which included an educational and counselling component.
Sinha et al. (2020)	United States	Adults in the community	To provide primary care services by video to patients of the family practice group	NPs used the video system to see their primary care patients, to assess and monitor remotely, and to determine the need for ED visit or in-person assessment.
Wall-Haas (2021)	United States	Paediatric patients with asthma	To provide tools and guidance to facilitate the implementation of televisits for children with asthma during the COVID pandemic	NPs were the target audience of this review that recommended the use of televisits for children with asthma to control and manage symptoms and provided tools to conduct such visits.
Waterman (2020)	New Zealand	Patients with diabetes	To support primary care providers and maintain ongoing evaluation and management of diabetic patients while minimizing risk of COVID-19 exposure/ transmission	CNS expanded the services of an existing patient on-call diabetes helpline to provide support for primary care teams caring for type-2 diabetes patients. CNS-led education sessions were also conducted via Zoom for primary care providers.

Source: Extracted from (Ziegler et al., 2023).

4. Recent developments in selected countries

40. This section provides insights into recent developments in advanced practice nursing in five OECD countries. These include short case studies on two countries that have a long experience with NPs in primary care (United States and Canada), another country where the experience with NPs is more recent but still well established (Australia) and two other countries that are still in the early phase of implementing more advanced roles for nurses in primary care (France and Italy).

4.1 Australia

Introduction and historical evolution of NPs

41. The origins of the NP role in Australia stems from government funding of ten demonstration projects in the state of New South Wales (NSW) in the early 1990s. The purpose was to show the added value of the NP role in Australia, like roles already established in the United States and the United Kingdom. In 1998, NSW established title protection for the NP role and in 2000 the first two NPs in Australia were authorised to practice. Other states and territories followed with legislated title protection and changes to medicines legislation (Helms & Boase, 2023).

42. NPs began with tightly controlled and limited clinical scopes of practice, but these have evolved over time. The Australian Nurse Practitioner Association was established in 2003, which became the Australian College of Nurse Practitioners in 2009. It advocates for NPs working to their full scope of practice (Helms & Boase, 2023).

43. In 2010, funding reforms enabled patient subsidies for primary care provided by NPs under a collaborative arrangement with a doctor. While these collaborative arrangements do not restrict the ability for NPs to practice independently or restrict their scope of practice, NPs private practice income can be restricted without them (Helms & Boase, 2023).

Number and scope of practice of NPs in Australia

44. Since 2000, there has been steady growth in the NP workforce, although the share of NPs relative to the overall number of registered nurses (RNs) remains low. In 2022, there were approximately 2,300 NPs registered in Australia (Figure 2), representing about 1% of the total RN workforce.

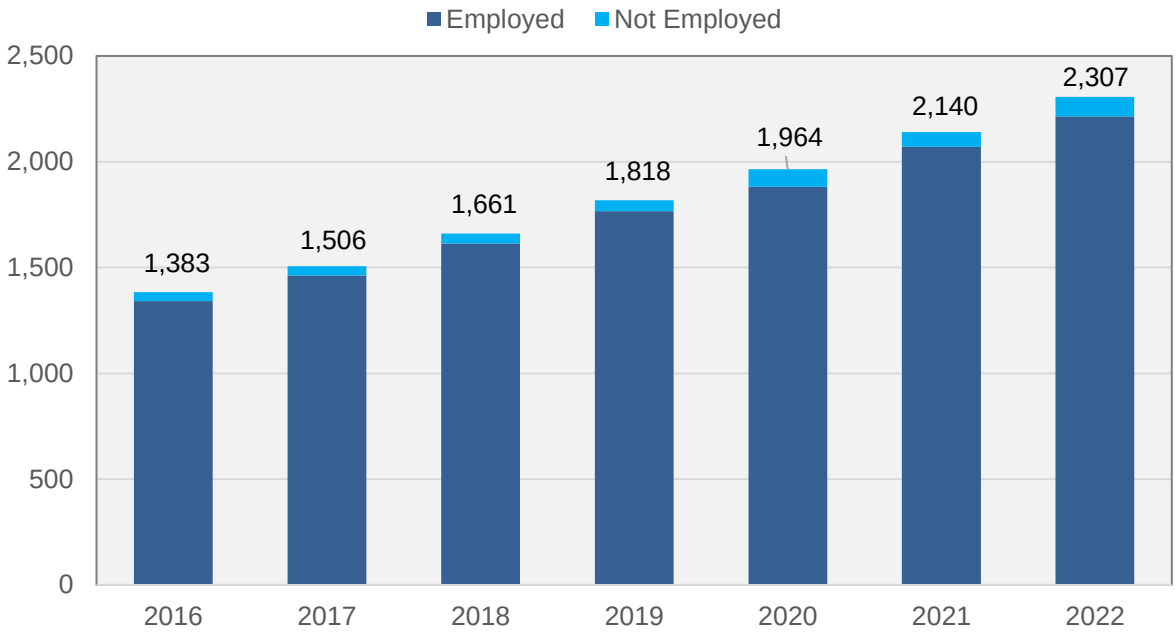
45. Contrary to original plans for the NP role, the evolution of NPs in Australia has seen the role develop more strongly around specialised areas of practice, with the majority of NPs working in acute care (Rossiter, Phillips, Blanchard, Van Wissen, & Robinson, 2023). In 2019, over half of the employed NPs (55%) reported they principally worked in either hospital inpatient or outpatient services, with 72% working in the public sector. Just over fifth of the NPs worked either in community health services (15%), GP clinics (5%) or Australian First Nations health services (1.5%). Less than 5% of NPs reported they

worked in independent private practice. Other NPs worked in long-term care facilities and other settings (Department of Health, 2020).

46. While just over two thirds (68%) of NPs worked in metropolitan areas in 2019, NPs were still more highly represented in rural and remote communities with over 11 Full Time Equivalent (FTE) NPs per 100,000 population in rural towns and remote communities and over 22 FTE NPs per 100,000 in very remote communities, compared with less than 7 FTE NPs in metropolitan areas (Department of Health, 2020).

47. NP scope of practice is determined by the individual NP, their employer, and legislation. Core practice activities unique to the NP role compared to other advanced practice nurses in Australia include their ability to independently: assess, diagnose and treat patients, prescribe medicines, request and interpret diagnostic imaging, request and interpret diagnostic pathology, and refer patients to allied health and medical specialists for management (Helms & Boase, 2023).

Figure 2. Rising number of registered nurse practitioners (NPs) in Australia, 2016-2022



Source: (Department of Health and Aged Care, 2023a)

Persisting issues in expanding the use and scope of practice of NPs.

48. There are concerns that while the NP role has been embedded in Australia for more than 20 years, the workforce remains small.

49. A 2019 review of nursing education in Australia observed that role confusion, availability of lower-cost nurse specialists, resistance from doctors, and a variety of restrictions on NP's scope of practice, have all led to declining enrolment in NP courses, fewer new NP positions being created, and many registered NPs not working in NP positions (Schwartz, 2019).

50. In considering strategies to improve access to primary care in rural and remote areas of Australia, researchers have noted that NP role development as a systematic approach to addressing health workforce shortages in these communities is largely absent (Rossiter et al., 2023).

51. During the pandemic, the government subsidised the uptake of telehealth and allowed government support to privately practicing NPs to offer services to isolated populations and contribute to a decreased risk of COVID-19 transmission. NPs were also able to prescribe and administer vaccinations but, initially, this was only allowed if supervised by a GP or other suitably qualified professional. After lobbying by the nursing profession, the government relaxed this requirement from mid-2021. The pandemic also highlighted flaws in the financing system in relation to NP practice (Bouchoucha & Scanlon, 2022).

Emerging priorities for strengthening NP integration into the health system.

52. There is growing acceptance that more needs to be done to promote a greater use of NPs, with the Australian government recently stating that the NP workforce needs to grow to help address inequalities in access and outcomes (Department of Health and Aged Care, 2023a). Recent related policy initiatives include:

1. **Advanced Nursing Practice Guidelines:** The Australian national and regional government Chief Nursing and Midwifery Officers collaborated to publish the Advance nursing practice guidelines for the Australian context in 2020. The guidelines provide information and guidance for nurses, employers and health planners and policy makers on the concept of advanced nurse practice in the Australian context.
2. **Strengthening Medicare Taskforce Report:** The Australian government brought together a group of health leaders to identify the most pressing investments needed in primary care, building on the direction outlined in Australia's Primary Health Care 10 Year Plan 2022–2032. The report delivered in late 2022 identified the need for multidisciplinary teams of health professionals working to their full scope of practice to provide person-centred care and called for the fast-tracking of work to improve the supply and distribution of doctors, nurses, NPs and other primary care professionals (Australian Government, 2022).

   The Australian national and regional governments announced a package of measures in April 2023 to address the key recommendations for investment in primary care from the Strengthening Medicare Taskforce report, including measures to support health practitioners to work to their full scope of practice (Australian Government, 2023).
3. **Nurse Practitioner Workforce Plan:** A national 10-year plan for the NP workforce was released by the Australian government in 2023 setting out four themes for action to improve community awareness of NP services, increase NP services, support NPs to work to their full scope of practice and grow the NP workforce. Actions specified in the plan focus on education and lifelong learning for nurses, creating incentives to strengthen recruitment and retention of NPs, developing models of care that are person centred and culturally safe and strategically planning for the workforce needs based on NPs consistently working to their full scope of practice (Department of Health and Aged Care, 2023a).
4. **Scope of Practice Review:** The government subsequently announced in August 2023 an independent Scope of Practice Review to examine how government can better help health practitioners work to the full extent of their skills and training and strengthen primary care. The review is titled *Unleashing the potential of Australia's health workforce* and is to be completed in the second half of 2024 (Department of Health and Aged Care, 2023b).
5. **National Nursing Workforce Strategy:** Australia has recently commenced extensive consultations on the first National Nursing Workforce Strategy which, along with many other goals, will discuss careers pathways including into advanced nursing practice roles such as the nurse practitioner.

Key developments that will further build the role of NPs in primary care in Australia include:

- Refocussing NP education programmes away from acute hospital care to primary care to strengthen their generalist role in health care provision, while retaining specialist expertise.
- Establishing payment systems that better support the delivery of services for people with chronic and complex conditions, moving away from fee for service to models that link payment to outcomes.
- Harmonising legislation across states and territories to support a national approach to regulating NP roles to enable them to work to their full scope of practice regardless of where they practice in the country.

4.2 Canada

Introduction and historical evolution of NPs

53. Canada has a long experience of nurses in advanced practice roles in primary care, including both nurse practitioners (NPs) and clinical nurse specialists (CNS). NPs first appeared in Canada in the 1960s in response to shortages of primary care doctors (GPs) in rural and remote areas. Although their role became largely obsolete by the 1980s as the number of doctors increased, there was renewed interest in NPs in the 1990s as a way to improve access to primary care in a context of new concerns about doctor shortages (DiCenso A et al., 2007). Continued shortages of GPs and related issues with access to primary care have triggered growing interest over the past three decades to train and employ more NPs to help meet population healthcare needs in the community and hospital.

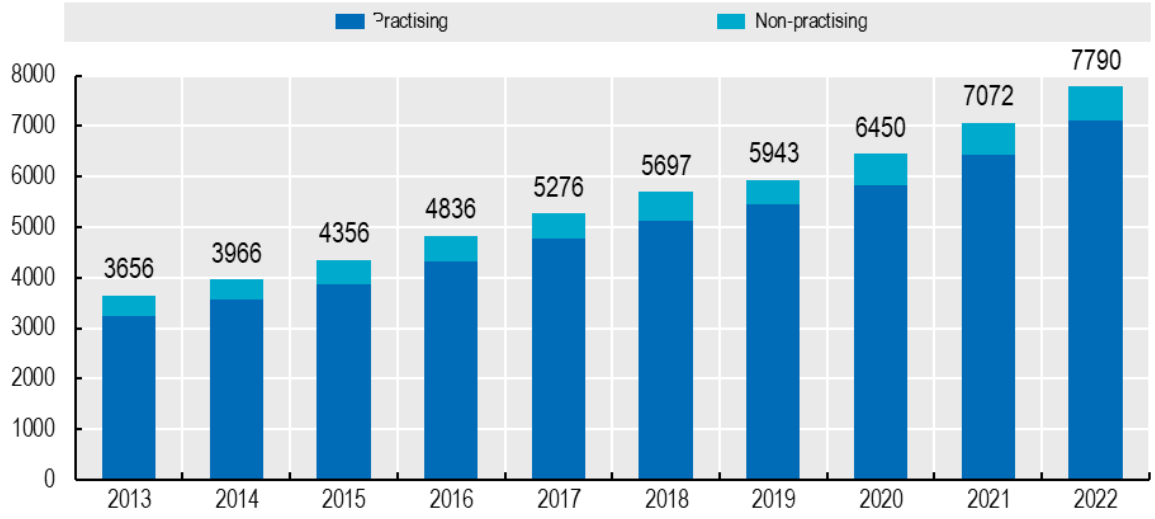
54. Legislations recognising the NP role took many years to be adopted across the country. The province of Alberta was the first to pass legislation in 1996 and the Yukon Territory the last in 2009 (Miller et al., 2023).

Number and scope of practice of NPs in Canada

55. In 2022, there were 7790 licensed NPs in Canada, with the number more than doubling over the last decade, according to data from the Canadian Institute for Health Information (Figure 3. Rising number of licensed nurse practitioners (NPs) in Canada, 2013-2022).[3] NPs represented 2.5% of all licensed registered nurses (RNs) in 2022. Over 90% of these licensed NPs (7143) were providing direct care to patients ("practising"). Between 2021 and 2022, the number of both licensed and practicing NPs grew by over 10%, a faster growth rate than in the preceding years.

[3] The Nurse Practitioner Association of Canada reports an even greater number of licensed NPs (9235 in 2022) (NPAC-AIIPC | Association des infirmières et infirmiers practiciens du Canada » NP Licences Held in Canada).

Figure 3. Rising number of licensed nurse practitioners (NPs) in Canada, 2013-2022

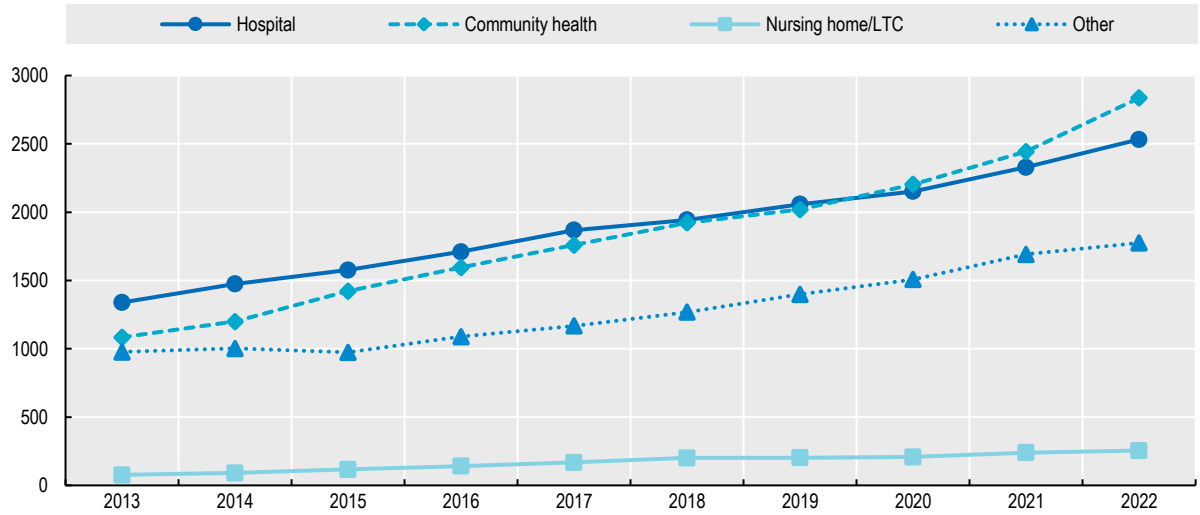


Source: CIHI, Nurse practitioners | CIHI

56. Most NPs in Canada are working in community health (including primary care) settings (38%) and hospitals (34%) (Figure 4). Other NPs work in long-term care facilities (3%) and other or unstated places of work.

57. The most populous provinces had the highest number of licensed NPs in 2022 (4135 in Ontario or over half of the total number, and 1185 in Quebec or 15% of the total). The province of British Columbia (761) and Alberta (674) also had many licensed NPs, while the Yukon Territory (22) had the lowest number. NPs work in all areas (urban, rural, and remote areas).

Figure 4. NPs working in community health, hospital, and nursing homes in Canada, 2013-2022



Note: In 2022, the breakdown by place of work is estimated for Quebec based on the 2021 shares.

Source: CIHI, Nurse practitioners | CIHI (CIHI, 2023)

58. The scopes of practice of NPs varies across Canada's provinces and territories. For example, while NPs have full responsibilities to order and interpret diagnostic tests in most provinces, these clinical activities are more restricted in some provinces such as Ontario, Newfoundland and Saskatchewan (CIHI, 2020).

59. Most NPs in all provinces and territories are salaried. NPs are primarily employed by health authorities or healthcare organisations, including family practices, community health centres, hospitals, or nursing homes. There are large variations in salaries for NPs across and within provinces. For example, in Ontario, hospital-based NP salaries are higher than those in the community (Maier et al., 2017).

Recent developments and plans to expand the use of NPs

60. The COVID-19 pandemic highlighted to the general public and policymakers the important role that NPs can play to fill gaps in primary care. Many provinces and territories have recently announced new initiatives and programmes to increase the training, recruitment, scope of practice and funding of NPs to address these gaps (Table 6).

Table 6. Examples of recent initiatives to increase the training, recruitment, scope of practice and funding of NPs in Canada

Province	Date announced	Intervention category	Intervention summary	Source
Alberta	18-10-2023	Opening/resuming of services	Introduction of a payment system to support NPs to open their own clinics, take on patients and offer services based on their scope of practice and training.	Strengthening health care: Improving access for all | alberta.ca
Saskatchewan	2023-06-16	Change in practice	The scope of practice of NPs will be expanded in hospitals (e.g. admission and discharge activities) and LTC facilities (e.g. allowed to conduct initial examinations of new LTC residents and provide ongoing medical care and treatment for residents).	Saskatchewan Expands Scope of Practice for Three Frontline Health Care Professions
Newfoundland and Labrador	2023-05-18	Recruitment	Recruitment incentives for NPs who commit to work within a family care team in the province will range from $20,000 to $40,000. NPs must sign a 1-year agreement with an option to extend the incentive for a second year.	Recruitment Incentives Announced for Nurse Practitioners to Work Within Family Care Teams and Rural Emergency Departments
Quebec	2023-03-25	Opening/resuming of services	23 new clinics will be opened and staffed with specialized nurse practitioners (SNPs) by 2028. With the rapid opening of such new clinics, there is also great efforts to train these new SNP graduates.	http://www.finances.gouv.qc.ca/Budget_and_update/budget/documents/Budget2324_Communique4eng.pdf
Newfoundland and Labrador	2022-11-14	Recruitment	Regional health authorities will increase the recruitment of NPs, especially in rural areas. The aim is to employ them in collaborative community clinics that will be opened throughout the province.	https://www.gov.nl.ca/releases/2022/health/1114n01/
Quebec	2022-11-01	Opening/resuming of services	Opening of 3 new NP clinics to reduce pressure on emergency departments and physicians.	https://www.quebec.ca/nouvelles/actualites/details/situation-dans-les-urgences-le-ministre-christian-dube-presente-les-trois-premieres-solutions-de-la-cellule-de-crise-43716
Ontario	2022-10-05	Recruitment	Over the next 3 years, about $57.6 million to be allocated for the recruitment of 225 NPs in long-term care (under the programme called Hiring More Nurse Practitioners for Long-Term Care).	https://news.ontario.ca/en/release/1002364/ontario-hiring-225-additional-nurse-practitioners-in-the-long-term-care-sector
British Columbia	2022-02-20	Training	Funding for 20 additional student NP spots.	B.C. government funding 602 new student nursing spots | Globalnews.ca

Source: CIHI HHR Policy Intervention Scan (September 2023)

Summary

61. The number and scope of practice of NPs in the Canadian health system, both in primary care and in hospitals, has continued to increase over the past decade, in the face of growing demand for healthcare and continued shortages of doctors in primary care and hospital. However, there remain variations across provinces and territories in the use of NPs and their scope of practice. Given that many Canadians still lack a primary care provider, further growth in the demand and supply of NPs in primary care can be expected in the coming years.

4.3 France

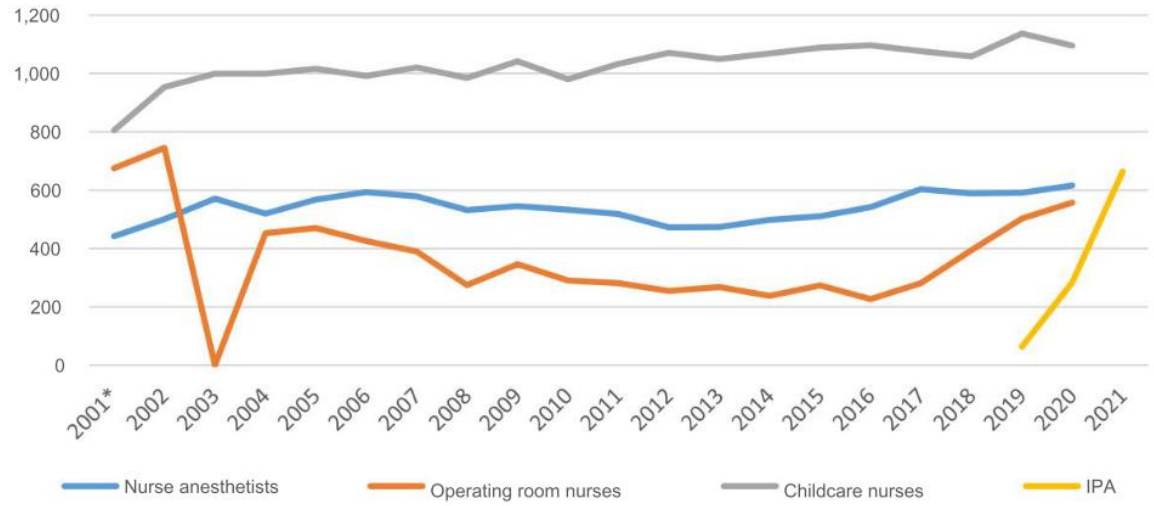
Introduction and brief historical evolution of APNs

62. While nurse specialists (such as nurse anesthetists) have played an important role in the French health system over the past few decades, APNs ("infirmiers en pratique avancée") have emerged only recently as a new recognised professional group in hospital and primary care. The legislative framework authorizing the implementation of advanced practice nursing was first published in 2016. This was followed by the adoption of a set of regulatory measures in 2018, 2019 and 2021 that defined five domains of intervention for APNs. The most important domains of intervention in primary care include prevention, the management of chronic conditions and coordination between hospital and community services. The overall aim of introducing advanced practice nursing was to improve access to care for the population in all regions (including those where there are relatively few doctors) and promote more multidisciplinary teamwork (Colson et al., 2021). The introduction of APNs as a recognised profession in the Public Health Code followed a decade of experimentations in multiprofessional cooperation in the management of chronic conditions such as diabetes. It was supported by the creation of master's level programme in advanced practice nursing.

The number of APNs in primary care in France remains limited

63. The first students of the newly accredited APN master's level programme graduated in 2019. By 2020, over 300 APNs had graduated and the number doubled to over 600 in 2021 (Figure 5). About 1,400 students were enrolled in this two-year training programmes in 2021, including about 730 in the first year and 670 in the second year (Devictor et al., 2023). The government announced in 2022 an objective to train 5,000 new APNs by 2027. This would mean that the annual inflow of new APN graduates would be close to the level of new nurse anaesthetist graduates.

Figure 5. Graduates in nursing specialties and advanced practice nursing in France, 2001-2021

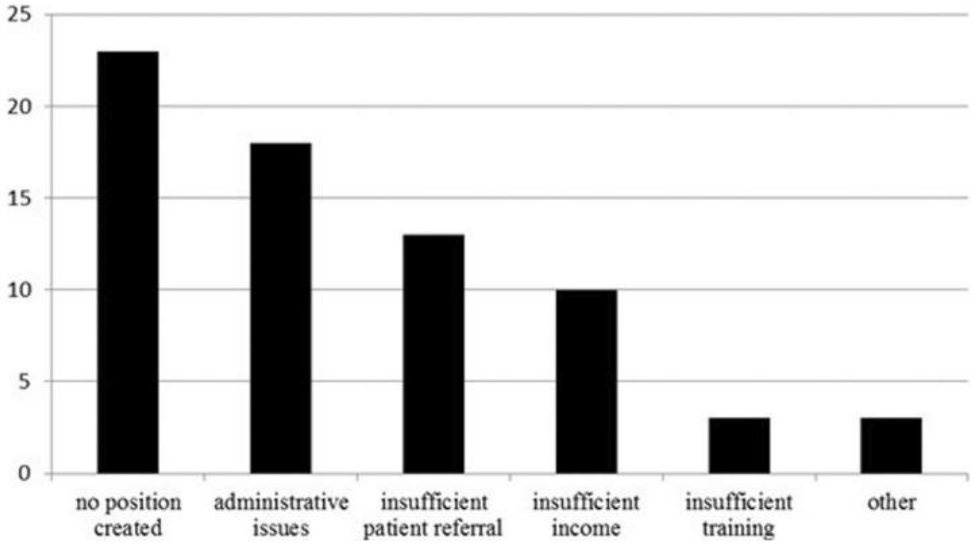


Source: DREES (Direction de la Recherche, des Études, de l'Évaluation) School Survey (Blemont & Debeaupuis, 2022). In 2003, no operating room nurse graduates were recorded given the extension of the diploma from 12 to 18 months in 2002.

The government's initial aim was to introduce an additional 700 new APNs per year in the health system, with half of them working in primary care. However, the actual deployment of APNs in primary care has fallen short of this initial objective, and there have been limited opportunities for APNs to find work either

as self-employed workers or employees (Colson et al., 2021; Devictor et al., 2023; Luan & Fournier, 2023; Schwingrouber, Bryant-Lukosius, Kilpatrick, Mayen, & Colson, 2023). By-mid 2022, there were only an estimated 120 APNs working exclusively as self-employed workers based on billing data (Luan & Fournier, 2023), and the most recent estimate shows only a modest increase to 150 self-employed APNs in 2023. Recent APN graduates reported a lack of (salaried) positions created in their organisation, administrative issues blocking prescription credentials, insufficient patient referrals from GPs and insufficient income generation in primary care practice as the main barriers to practice (Figure 6).

Figure 6. Barriers to employment identified by APN graduates in France, 2021



Note: Based on survey responses from 49 APN graduates.
Source: (Devictor et al., 2023)

64. Up until recently, the health system required GPs to prescribe nurse services, which the national health insurance then reimbursed. This meant that the scope of APN service delivery was largely determined by doctor referrals to them. However, GP referral rates have been extremely low compared for instance to referral rates to physiotherapists (Peurois et al., 2022). Self-employed APNs have reported that doctors were generally reluctant to refer patients, and when they did, they were referring the more complex and time consuming chronically ill patients, resulting in reduced income and practice sustainability (Luan & Fournier, 2023). Recent experimentations with capitation payments for primary care group practices (based on the size and composition of patients) were designed to promote greater multidisciplinary teamwork between doctors and nurses as a way to increase the number of patients per practice without overburdening GPs, but the initial take-up of these experimentations has been very low in multidisciplinary health homes that continue to rely mainly on traditional individual fee-for-service payments (Legrand & Pitti, 2024).

65. However, since May 2023, a new law allows patients to access directly APNs without a GP's referral. As specified under the Public Health Code, APNs can provide a range of services, including prevention and screening services, clinical assessment and surveillance, prescriptions of medications not subject to compulsory medical prescription, prescriptions of complementary examinations, and renewals or adaptations of medical prescriptions (Légifrance, 2023). This new law enabling easier access to APNs was adopted despite critiques from some unions representing self-employed GPs that this would reduce the quality of care. Following the adoption of this new law, the French Medical Federation (FMF) has argued that if APNs are to play a greater role as a first point of contact for patients,

any follow-up consultation of these patients with doctors should be remunerated as a complex consultation and reimbursed at a higher rate (Fédération des Médecins de France, 2023).

Priorities to strengthen APN integration into the health system

66. One of the main short-term priorities is to move towards the concrete implementation of the new law adopted in May 2023 to facilitate access to APNs as a first point of contact while avoiding as much as possible any negative perception of competition with doctors. This will require a flexible implementation approach and continued discussion with doctors to alleviate any concerns. There are also calls to improve role clarity and autonomy of APNs (Schwingrouber et al., 2023), while recognising that adjustments will be necessary as new APNs are deployed in various primary care settings.

67. Some considerations are also given to expand the potential domains of intervention of APNs in the area of child care, which might involve a transformation of the current nurse paediatric specialty.

4.4 Italy

Introduction and historical evolution of APNs (family and community nurses)

68. While the establishment of advanced nursing education programmes in Italy started about two decades ago with the creation of a first master's degree programme in 2004, it is only in the past few years that there have been some movements towards expanding the roles and responsibilities of nurses in primary care. Unlike many other European countries, advanced practice roles such as Clinical Nurse Specialists (CNS) and Nurse Practitioners (NP) have not formally been created in Italy, but a new family and community nurse (FCN) role was created just before the pandemic and have expanded rapidly since then to scale up health promotion and prevention with a particular focus on people with chronic conditions. In many ways, the roles of FCN in Italy resemble those of public health nurses in the United Kingdom and Ireland. Italy has built on earlier efforts in Europe to establish a common understanding and a standardised educational pathway for FCNs (Box 2).

Box 2. Background on Family and Community Nurses

69. WHO-Europe started to draw attention over 20 years ago about the potential role that family and community nurses (FCN) could play in new models of primary care. As part of the Health21 health policy framework, WHO-Europe introduced the family health nurse role as a potential response to shifting population health needs, particularly in managing chronic conditions in the community. The concept of the family health nurse was built around the need to address the comprehensive health and care needs of the family as a unit from a community perspective (P. Martin et al., 2013). It was intended to provide support in the family home, with nurses providing advice and offering early interventions and treatment options, and signposting family members to ongoing care. The role was designed to have a public health focus and provide wider support with social issues (WHO Regional Office for Europe, 2000).

70. Considerable work was subsequently undertaken to establish a common understanding of the role of the FCN in Europe through the identification of common competencies and the development of related educations programmes. In 2011, building on earlier developments in Scotland and other European countries, the European Commission funded a project to help develop an education platform for establishing family health nursing as a nursing specialty (P. Martin et al., 2013). In 2018, the European Commission funded another project (ENhANCE) to develop a standardised curriculum for FCNs at the European level. The project resulted in the piloting of the curriculum in Finland, Greece, and Italy, with Italy delivering the course through a one-year master's programme (Musio et al., 2022).

71. The process of developing an EU curriculum for FCNs was challenging for several reasons, including the fact that education in Europe is a national responsibility and therefore diversified (Pozzi, Passarelli, & Manganello, 2021).

The role of FCNs in new models of primary care for Italy

72. Before the pandemic, Italy had been progressively evolving local primary care services known as 'health houses' (Case della Salute) to establish care networks based on the medical home model in the United States and other countries. These developments marked a move towards offering care from a more integrated team of general practitioners, specialists, and nurses. The region of Emilia-Romagna had been particularly active and had developed a network of 107 'health houses' across 8 local health areas by 2019 (Keith et al., 2022).

73. With the advent of the pandemic, there were growing concerns that primary care reforms had not gone far enough. In 2020, amidst the pandemic, the National Federation of Nursing Professions released a statement outlining the need to have the FCNs play a central role in new models of primary care to help address the health needs of people in the community, particularly in relation to chronic conditions and further integrating social care (FNOPI, 2020).

74. In this context, an emergency Decree-Law adopted in May 2020 enabled the establishment of FCNs in local areas across Italy. While these nurses were initially recruited on flexible contracts, since 2021 they began to be recruited on permanent contracts. The initial plan was that the number of FCNs would not exceed 8 nurses per 50,000 population, which equals about 9,600 FCNs across the country.

75. The deployment of FCNs in the aftermath of the pandemic has been supported by the EU-funded National Recovery Plan (RRP), which is devoting about EUR 1.6 billion to healthcare over the period 2021-26. One of the focus of the plan is to make health services more accessible, particularly for frail and vulnerable people with chronic diseases. Specific initiatives to achieve this objective include the establishment of 'community houses' (Casa della Comunità), strengthening of home care,

expansion of telemedicine and the building of more community hospitals (Tanese, 2023). The 'community houses' are intended to bring together health care and social support in a single community service and can be viewed as an extension of the existing 'health house' model in strengthening primary and community healthcare in Italy.

76. In 2022, the Italian government approved reforms to establish 1,350 'community houses' by mid-2026. These new services will help with all non-urgent health needs of a population of about 50,000 people and will be staffed by multi-professional teams of GPs, paediatricians, FCNs, and other health and social service professionals. Local networks of 'community houses' will be established, with 'hub' community houses offering a wider range of services on a 24/7 basis and supporting 'spoke' community houses (Vinceti, 2023).

Number and scope of practice of FCNs in Italy

77. As part of these 2022 reforms, the Italian government roughly doubled the target number of FCNs to 1 per 3,000 population, which is equivalent to about 20,000 FCNs to be recruited by mid-2026. The distribution of FCNs needed across regions vary according to population size and composition. However, there are concerns that the need for additional FCNs will only worsen the nursing shortage in Italy, given national estimates of a shortfall of up to 70,000 nurses and regional disparities being reported (FNOPI, 2022; Pascale, 2023).

78. The scope of competences of FCNs who will work in 'community houses' has been established, notably by the Ministerial Decree no. 77 of 2022. Their role will be based on a collaborative model of multidisciplinary teamwork involving health and social services staff. They will focus on providing health promotion, prevention, and healthcare management and be involved in facilitating access to care, promoting active community engagement, counselling and coaching patients, integrating in social care networks and working with GPs to improve prevention, early detection and management of chronic diseases.

79. In order to ensure services are available on a 24/7 basis, the hub 'community houses' will be staffed with 7-11 FCNs, indicatively organised as follows: 1 FCN Nursing Coordinator; 2-3 FCNs for outpatient activities; 1-2 FCNs for triage and health needs assessment; and 4-6 FCNs for home care, prevention activities and teleassistance.

80. However, in this emerging context for primary care and FCNs in Italy, there remain concerns over the ability for these nurses to work to their full scope of practice. The *National Federation of Nursing Professions* is advocating for the Italian government to endorse new advanced practice nurse training profiles that would grant expanded roles and responsibilities, including the ability to prescribe over-the-counter medications and renew repeat prescriptions that originally came from a doctor (FNOPI, 2023).

81. Nurse roles in Italy remain auxiliary to doctors, which means that the FCNs' role, when working in community houses, is currently limited.

4.5 United States

Introduction and historical evolution of NPs

82. The United States led the way in establishing advanced practice nursing in the 1960s. The first nurse practitioner (NP) programme started in 1965 at the University of Colorado. The NP role grew out of the need to improve access to primary care (including health promotion, disease prevention and family health) for children and families, particularly in rural areas. Their role progressively evolved over the following decades and NPs now also work in specialty, acute and chronic care in the United States (Roberts & Knestrick, 2023).

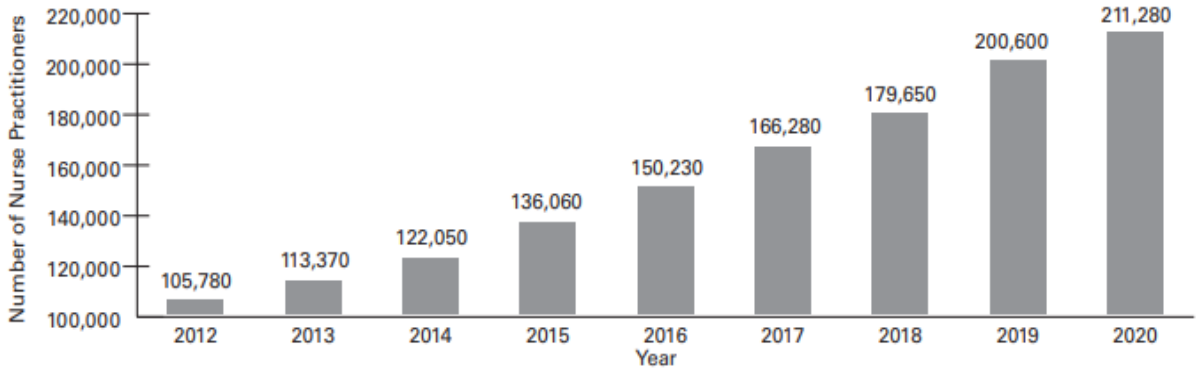
83. In 2009, an advanced practice registered nurse's consensus model was adopted nationally. This model of regulation recognised the roles of certified registered nurse anaesthetist, certified nurse-midwife, clinical nurse specialist, and certified nurse practitioner and gave theme the title of advanced practice registered nurse. NP may specialise (for example in emergency, dermatology, gerontology, cardiology, and oncology), but they cannot be licensed solely within a specialty area (APRN Joint Dialogue Group, 2008).

84. Today NPs practice in nearly all health care settings including private practices, clinics, hospitals, emergency and urgent care sites, federal healthcare agencies, nursing homes, retail clinics, university clinics, home health, and health departments (Roberts & Knestrick, 2023).

Number and scope of practice of NPs in United States

85. More than 355,000 NPs were licenced to practice in the United States in 2022, with nearly 260,000 employed (AANP, 2022; U.S. Bureau of Labor Statistics, 2022) compared with just over 210,000 in 2020. The NP workforce doubled over the period 2012 to 2020 (Figure 7).

Figure 7. Rising number of Nurse Practitioners (NPs) employed in the United States, 2012-2020



Source: United States Bureau of Labor Statistics as cited in (National Council of State Boards of Nursing, 2022)

86. The US Bureau of Labor Statistics projects that NPs will have the second highest occupation growth rate in the US between 2022 and 2032 (US Bureau of Labor Statistics, 2023). It is anticipated the impact will be amplified in primary care, where growth in physician supply has been slower than other medical fields and NPs tend to be more concentrated (Auerbach, Staiger, & Buerhaus, 2018).

87. NPs have primary care certification in a range of speciality areas, with over 70% of NPs certified in family health and nearly 9% in adult and geriatric primary care (AANP, 2022).

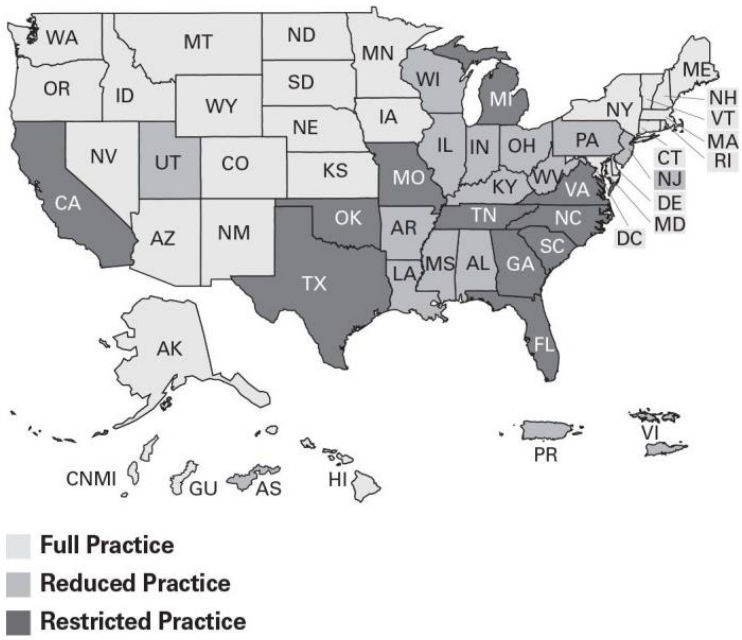
88. The scope of practice of NPs is derived from their education, which enables them to practice autonomously in a diverse range of areas, including family, paediatrics, geriatrics, acute care, and

women's health. NPs are prepared to provide comprehensive care, including providing examinations and other health assessment and screening activities, and diagnosing, treating, and managing patients with acute and chronic diseases. The care can involve ordering and interpreting diagnostic tests, prescribing medications, and medical equipment, and making appropriate referrals for patients.

89. Practice and licensure laws regulate the extent to which NPs can work to their full scope of practice and these vary across the 50 states of the United States (Figure 8). The American Association of Nurse Practitioners defines three types of practice authority for NPs:

- **Full:** permits NPs to evaluate patients, diagnose conditions, order and interpret diagnostic tests, and initiate and manage treatments (including prescribing medications).
- **Reduced:** can require collaborative agreement with another health provider for NPs to provide patient care or can limit one or more elements of NP practice.
- **Restricted:** requires career-long supervision, delegation, or team management by another health provider for NPs to provide care in at least one element of NP practice.

Figure 8. Variation in NP practice authority across the United States



Source: Adapted from AANP as cited in (Kleinpell, Myers, & Schorn, 2023)

90. Over half the states of the United States are classified as full practice authority, with thirteen classified as reduced practice and eleven classified as restricted authority (Kleinpell et al., 2023).

Recent developments and expansion in the use of NPs.

91. The COVID-19 pandemic placed pressure on the United States health system to increase access to care. In response, governors and state legislatures implemented strategies to better utilise APNs. Governors issued executive orders providing waivers for the temporary removal of limitations on practice of NPs, including the removal of requirements related to physician supervision, which allowed NPs to practice and prescribe independently (B. Martin, Buck, & Zhong, 2023).

92. During the pandemic, five “reduced practice” states temporarily lifted all practice restrictions and eleven “reduced practice” and two “restricted practice” states granted temporary waivers of select practice authority restrictions. Some of these changes became permanent with the state of Massachusetts adopting “full practice” authority and other states like Arkansas, Florida, Illinois, Louisiana, North Carolina, Oklahoma, Pennsylvania and Virginia also easing restrictions (Kleinpell et al., 2023).

93. As a result of removing regulatory and administrative barriers to practice, many APNs reported positive benefits to their care, including being able to spend more time with patients, expand the geographical boundaries of their practice and take on new patients. In some cases, APNs substantially shifted the distribution of their services, with a greater proportion provided in rural locations after the introduction of the waivers. Consistent with broader trends, there was also a growing movement to telehealth (B. Martin et al., 2023).

94. However, there are indications that advances in easing practice restrictions realised during the height of the pandemic have not been enduring in some states and significant restrictions persist. For example, in Tennessee the executive waiver during the pandemic was lifted after only three months.

Emerging priorities for strengthening NP integration into the health system

95. An agreement was developed for advanced practice nursing in 2020 and adopted by the National Council of State Boards of Nursing, which will permit NPs to hold a single license to practice across all participating states. This agreement is known as the APRN Compact and will be formally enacted when seven states have passed the legislation required for them to become a Compact state. As of mid-2023, only three states however had passed the required legislation.

96. The COVID-19 pandemic has amplified the need for less variability in licensure requirements across states and there is now renewed support for national licensure. This calls for nurses’ organisations to work collaboratively to achieve consensus on important topics related to APRN practice authority (Kleinpell et al., 2023).

Annex A. Recent evaluations of impact of nurses in advanced roles

Publication	Country	Objective of review	Studies included in review	Setting of studies	Main findings of review
Jakimowicz et al. 2017	International (Australia, New Zealand, United Kingdom, Canada)	To explore the experiences of patients, nurses and doctors who had contact with advanced practice nurses in general practice.	20 articles reporting the experiences of 486 participants. Studies were conducted in Australia (10), New Zealand (1), Canada (3), the United Kingdom (5) and continental Europe.	General practice	Major theme of legitimacy of role reflected in a) challenges in establishing and maintaining GP and patient confidence in the advanced practice nurse, b) efforts to clarify boundaries between GPs and APNs often resulted in trivialising nurse duties and c) delegation to APNs of more time-consuming responsibilities undermined the value of advanced practice nursing.
Laurant et al. 2018	International	To investigate the impact of nurses working as substitutes for primary care doctors on patient outcomes, processes of care, utilisation, and cost.	18 randomised trials evaluating the impact of nurses working as substitutes for doctors. One study was conducted in a middle-income country, and all other studies in high-income countries.	Primary care, ongoing care for physical complaints, and follow-up of patients with chronic conditions, such as diabetes.	Care delivered by nurses generates similar or better health outcomes for a broad range of patient conditions compared to care delivered by doctors: • Consultations are longer in primary care and numbers of return visits slightly higher. • Little or no difference in number of prescriptions, tests and investigations, hospital referrals and hospital admissions. Effect on costs of care is uncertain.
Kirigia, 2020	International	To review available evidence on the impact of APNs on patient outcomes.	10 studies conducted between 2017 and 2020, including qualitative, quantitative, and mixed methods research.	Surgical, long-term care, cardiology, rural hospitals, emergency, and critical care.	Positive patient outcomes of APN care in terms of patient satisfaction, positive influence on care continuity and service efficiency, early detection of disease complication, decrease in polypharmacy, reduced transfer to intensive care units, and reduced mortality in acute care.
Liu et al. 2020	United States	To examine whether NP care exhibits differences in utilisation, costs and outcomes compared to doctors	Analysis of Veterans Health Administration data for patients seen in primary care clinics between 2010-12.	Primary care clinics	Utilization and cost of NP primary care were largely comparable to primary care doctors: small but significant reduction in utilisation and hospitalisations; similar diagnostic test ordering, cost, and outcomes for patients with chronic conditions (e.g. diabetes and hypertension).

Htay et al. 2021	International	To evaluate the effectiveness of the role of advanced nurse practitioners compared to physicians-led or other usual care.	13 articles involving randomised controlled trials across high income countries (5 trials were assessed as high quality and 8 low to moderate quality).	Primary care and hospital settings involving paediatric and adult patients.	Almost all trials reported that care from advanced nurse practitioners led to positive effects on patient care and service outcomes, including symptom severity, physical function, satisfaction, waiting times and costs. Results were found to be congruent to those from Laurent et al. 2018.
Huang et al. 2021	United States	To examine care quality associated with NP involvement in Accountable Care Organizations.	Analysis of administrative data for patients seen in primary care clinics between 2010-12.	Accountable Care Organizations	NP involvement was highest in larger organizations in states that allow full authority to practice and prescribe and in rural areas. Greater involvement was associated with fewer readmissions, higher scores on preventive care and improvement in some care quality measures; but not associated with improved chronic disease and/or medication management.
Ordóñez- Piedra et al. 2021	International	To update the available knowledge on the effectiveness of advanced practice nurse interventions in heart failure patients.	11 studies involving 43,754 patients, mostly from United States and non-European countries.	Inpatient, post discharge, telehealth, outpatient	The studies consistently confirmed that advanced practice nursing interventions in heart failure patients are associated with a reduction of up to 33% in the number of hospital readmissions, lower mortality and cost reductions compared to usual care. Although quality of life seems to improve, more studies are required to confirm this finding.
Dellafiore et al. 2022	International	To summarise the literature on family and community nursing, providing an overall view of the recent evidence.	90 studies between 2004 and 2021 were analysed and synthesised into five themes: clinical practice, core competencies, outcomes, organisational models, and APN training programmes.	Various community settings.	Family and community nurses can contribute effectively to population health, play a key role in understanding and responding to patients' needs, and positively influence patient-, nurse- and healthcare system-related outcomes. Future research is required to guide investment in the organisation and/or implementation of family and community nurse models
Lukewich et al. 2022	International	To synthesize evidence on the effectiveness of registered nurses (RN) on patient outcomes in primary care.	23 studies reporting patient outcomes were selected and categorised according to OECD PaRIS Conceptual Framework.	Various primary care clinics, including GP practices, family practices, health maintenance organisations,	Outcomes from care provided by primary care RNs are comparable and complementary to care provided by other primary care providers, specifically with respect to chronic disease prevention and management, smoking cessation, and wellness counselling.
Neto et al. 2023	International	To map the contributions and strategies to implement advanced practice nursing in primary health care	12 studies between 2001 and 2019 from United States, Brazil, England, China, United Kingdom, Finland, Switzerland, and Scandinavia.	Various primary care settings	Contributions that support APN practice in primary care are autonomy, therapeutic counselling, verbal communication, specialized clinical skills, and patient centred interaction. Strategies to support APN practice include continuing education, practice management, self-care, and disease management.

Annex B. Titles of nurses in advanced roles in primary care in OECD countries

Country	Title - English	Title - Original Language
Australia	Nurse Practitioner	Nurse Practitioner
Austria	Community Nurse	Diplomierte/r Gesundheit- und Krankenpfleger/in
Canada	Nurse Practitioner	Nurse Practitioner
Estonia[1]	Diabetic nurse, Geriatric nurse, Home nurse, Paediatric nurse, Oncology nurse, Family nurse, Psychiatric nurse, Pulmonology nurse, Rehabilitation nurse, Occupational health nurse, Other nursing specialist	Diabeediõde, Geriaatriaõde, Koduõde, Lasteõde, Onkoloogiaõde, Pereõde, Psühhiaatriaõde, Pulmonoloogiaõde, Taastusraviõde, Töötervishoiuõde, Muu õenduse tippspetsialist.
France	Advanced practice nurse	Infirmiers en pratique avancée (IPA)
Israel	Nurse Practitioner	NA
Lithuania	Advanced practice nurse	Išplėstinės praktikos slaugytojas
Netherlands	General practice-based nurse specialist	Praktijk ondersteunend huisarts-verpleegkundigen
	District nurse	Wijkverpleegkundigen
	Youth health care nurse	Jeugdverpleegkundigen
	Public health nurse	GGD-verpleegkundigen
	Nurse practitioner	Verpleegkundig specialisten
Norway	Nurse practitioner/Advanced practice nurse.	Avansert klinisk allmennsykepleie
	Psychiatric nurse	Psykiatrisk sykepleier
	Public health nurse	Helsesykepleier
Poland	Primary health care nurse	Pielęgniarka podstawowej opieki zdrowotnej
Portugal	Family nurse	NA
Slovak Republic	Specialist nurse	Sestra špecialistka
	Nurse with advanced practice	Sestra s pokro?ilou praxou

Country	Title - English	Title - Original Language
Switzerland	Advanced Practice Nurse	FR: Infirmier en pratique avancée (IPA)
United Kingdom	Advanced Practitioner Nurse	Advanced Practitioner Nurse
United States	Nurse Practitioner	Nurse Practitioner
	Advanced Practice Nurse	Advanced Practice Nurse

1. Titles currently in use for primary care, but in the future Estonia is planning to shorten the list to Advanced Practice Nurse with four different specialities.

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