

SCOPING REVIEW OPEN ACCESS

The Nurse Practitioner's Immuniser Role in Primary Healthcare: A Scoping Review

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ABSTRACT

Aim(s): This scoping review aimed to explore and identify literature about the scope of practice for nurse practitioners working as immunisers in primary healthcare.

Design: The review was conducted according to the JBI scoping review framework.

Methods: A comprehensive literature search was conducted on 11 December 2023 to identify primary studies examining the role of nurse practitioners in immunisation delivery within global primary healthcare settings. The inclusion criteria were limited to peer-reviewed primary research that specifically examined nurse practitioners' roles in primary healthcare settings in immunisation clinics and/or administering immunisations. Data were systematically extracted using a data extraction table, and article screening was independently performed by two reviewers. Reporting of findings was guided by the PRISMA-ScR checklist.

Data Sources: Medline, Scopus and CINAHL including peer-reviewed literature from January 2000 to December 2023.

Results: A total of 1025 articles were identified; following screening and removal of duplicates, 52 articles underwent full-text screening and 8 articles that met the inclusion criteria were included in this review. Themes were identified using a qualitative descriptive approach: nurse practitioner scope of practice in primary healthcare; nurse practitioners addressing service gaps in primary healthcare; and the nurse practitioner's role in immunisation provision in primary healthcare.

Conclusion: Findings suggest that the roles and responsibilities of nurse practitioners working in primary healthcare are highly variable. Little research has been conducted to explore the nurse practitioner's immuniser role in primary healthcare.

Patient or Public Contribution: No patient or public involvement was included in this scoping review.

Implications for the Profession: This review provides insight into the current knowledge about the Nurse Practitioner Immuniser role in Primary Healthcare. While Nurse Practitioners have contributed to public immunisation efforts globally, the role and scope of nurse practitioner immunisers in primary healthcare are still evolving.

1 | Introduction

The nurse practitioner (NP) movement commenced in 1965 when Loretta Ford, alongside a team of paediatricians and paediatric nurses, created and delivered a training programme to increase health services for disadvantaged children in both rural and urban areas in the United States (Aruda et al. 2016). Since

its inception, the NP movement has evolved to meet changing community healthcare needs and to adapt to meet the global rise in chronic diseases Aruda et al. (2016), with NPs now recognised in many countries, including the Netherlands, United Kingdom, United States, New Zealand, Saudi Arabia, Canada and Australia (Currie et al. 2018). Many NPs work in primary healthcare (PHC) for the initial delivery of healthcare services

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Summary

- What does this paper contribute to the wider global clinical community?
 - Highlights how the nurse practitioner's role and scope of practice advances primary healthcare
 - Successful nurse practitioner-led models of care meet gaps in service delivery.
 - The nurse practitioner's role in meeting vaccination targets.

in the community, addressing individual health needs through activities such as health promotion, providing immunisations, chronic disease management, rehabilitation and palliative care (Rossiter et al. 2023). Globally, it is recognised that rising healthcare costs and an increasing number of individuals living with chronic conditions necessitate alternative healthcare models to address service gaps (Aruda et al. 2016).

The NP role was introduced into the Australian healthcare system in 2000 to fill service gaps for underserved populations in primary and community care settings in rural and remote areas, similar to the initial NP movement in the United States (Currie et al. 2018). In 2021, the Canadian Institute for Health Information (2024) recorded that 6135 NPs were working in all areas of healthcare, while Australia had 1549 NPs, with only 13% employed in PHC (Department of Health and Aged Care 2021). In 2023, the total number of Canadian NPs increased to 7478 Canadian Institute for Health Information (2024), while in Australia, the total number of NPs increased to 1687 by 2023; the percentage working in PHC remained at 13% (Department of Health and Aged Care 2024). In contrast, New Zealand had 530 registered NPs in 2021, with approximately 42% working in PHC roles (Adams et al. 2022). Notably, in 2021 nearly 50% of all PHC NPs in New Zealand worked across multiple clinical settings (Adams et al. 2022). However, by March 2023, while New Zealand's NP workforce had grown to 695, there was a decline to 38% of NPs working in PHC and a further reduction to 24% working across multiple settings (The Nursing Council of New Zealand 2024).

Even at such small numbers, NPs are in demand in both primary and community settings to address gaps in service (Currie et al. 2020). However, significant variations exist in skills, scope of practice and responsibilities among NPs in PHC settings (Currie et al. 2020). The introduction of NPs into PHC has required medical centres to establish new functions and relationships between health practitioners with the adaptation of organisational policies and processes (Mustafa 2021). Immunisations are typically provided in PHC settings, where NP immunisers play a vital role in preventative healthcare. Immunisation is one of the most cost-effective and efficient primary prevention strategies for illness prevention (Wright et al. 2017). Immunisation induces immunity after administering a vaccine and is recognised as a key strategy for preventing and controlling vaccine-preventable diseases by providing a safe and economical measure (Medeiros et al. 2019). A vaccine is a product made from killed, live or weakened strains of viruses or bacteria, containing antigenic properties that, when administered through vaccination, initiate the immunisation process, ultimately leading to immunity in individuals (Medeiros et al. 2019).

Prior to the COVID-19 pandemic, global immunisation coverage for vaccine-preventable diseases (VPDs) had decreased (Mahimbo et al. 2023). According to the Australian Institute of Health and Welfare (2019), a comparison of the top five VPDs in Australia, Europe and Canada shows that influenza and pneumococcal are among the top five diseases in all three regions. At the same time, hepatitis B and *Haemophilus influenzae* type b (Hib) are prevalent in Europe and Canada (Australian Institute of Health and Welfare 2019).

In the PHC context, registered nurses (RNs) and endorsed enrolled nurses (EENs) administer immunisations under the supervision of the general practitioner (GP) or physician. NPs, on the other hand, have an expanded scope of practice, including prescribing authority with the ability to prescribe vaccines, provide patient education to obtain informed consent and independently administer immunisations. NPs increasingly assume diverse roles within PHC, addressing complex patient needs and enhancing service delivery (Elia et al. 2021).

A critical and emerging function is that of the NP Immuniser, who plays a pivotal role in vaccination provision (Elia et al. 2021). With the rise in international travel and the global resurgence of VPDs, NPs are well positioned to offer opportunistic immunisations to individuals of all ages seeking care at PHC clinics. Despite the widespread availability of vaccines, adults worldwide continue to contract VPDs (Bach et al. 2019).

A review of existing literature on the role of NP Immunisers in PHC identified a limited number of studies. Consequently, a scoping review explored the available literature on the scope of practice for NPs functioning as immuniser providers in PHC settings.

2 | The Review

2.1 | Aim/s

This scoping review aimed to identify and summarise existing evidence about the NP Immuniser role in PHC. The mnemonic 'PCC' was followed to guide the question for this review, where the *population*, *concept* and *context* are described (Pollock et al. 2023).

The review sought to answer the following broad question: What is the role of the nurse practitioner immuniser in primary healthcare?

2.2 | Design

This scoping review was undertaken following the Joanna Briggs Institute (JBI) methodology for scoping reviews and reported following the preferred reporting items for systematic review and meta-analysis protocols extension for scoping reviews (PRISMA-ScR) (Tricco et al. 2018).

2.3 | Inclusion and Exclusion Criteria

This scoping review considered primary research about NPs working as NP Immunisers in PHC. The inclusion criteria were limited to peer-reviewed primary research that examined

the role of NPs in PHC in immunisation clinics and/or administering immunisations. Literature published in languages other than English was excluded. Articles focusing on the NP Immuniser role outside of PHC or emphasising the role of GPs, physicians, physician assistants, EENs, midwives and RNs in PHC were excluded. While these healthcare professionals play a role in immunisation delivery in PHC, this study specifically sought to examine the unique scope of practice for NPs functioning as Immunisers in PHC settings. The search period was limited to 2000–2023 to align with the NP inception in particular within Australia.

2.4 | Search Methods

A preliminary search for existing scoping reviews on the topic of the role of NPs administering immunisations in PHC was conducted in the JBI Database of Systematic Reviews and Implementation Reports to identify similar publications on the topic to avoid duplication. No reviews were found that identified the role of NP immunisers in PHC.

Keywords and MeSH terms were identified in collaboration with the university librarian, who provided guidance on developing the search strategy and the selection of databases. Three databases were searched: these being Medline, Scopus and CINAHL. Additional simplified web searches were conducted in Google Scholar to identify additional publications and literature. The search terms were adapted for the different databases Table 1 (Study selection and keywords). Studies were identified if they used keywords including ‘nurse practitioner’, ‘nurse’s role’, ‘role’, ‘scope of practice’, ‘immunisation nurse’, ‘immunisation nurse’, ‘primary health care’, ‘primary healthcare’ or ‘primary care’. The search was limited to articles containing keywords or combinations of keywords in the title, abstract or keywords section.

After removing duplicates, included abstracts were downloaded onto the JBI Sumari online platform for title and abstract screening. Initially, all authors directed the eligibility criteria, and subsequently, two authors (Authors 2 and 3) independently screened all titles and abstracts. All studies and articles identified were assessed for inclusion. Titles of articles underwent screening twice, followed by a review of abstracts. Included studies were primary research published between 2000 and 2023, written in English and related to the NP Immuniser role in PHC. Articles were then reviewed by the three authors, considering quantitative and qualitative primary studies. Exclusions included books, chapters and conference proceedings. Full-text publications were reviewed by Author 1, then independently by Authors 2 and 3 against the

eligibility criteria, with any conflicts resolved by all three authors. The final list of full-text papers was confirmed by all three authors.

2.5 | Data Extraction

Author 1 conducted data extraction using a standardised template (see Table 2 Summary of Included Sources) developed by the authors in Microsoft Excel. The extracted data encompass various elements including the study title, author(s) name, publication year, study aims, design, population and context, data analysis and results. To address the review question, supplementary fields were incorporated to extract data about NP roles in PHC settings, specifically focusing on the NP immuniser role in immunisation provision within PHC.

2.6 | Data Analysis and Presentation

The reporting of scoping review findings varies across the literature (Tricco et al. 2016), and given the heterogeneity in the aims and scope of the included studies (see Table 2 Summary of included sources), a descriptive qualitative approach was utilised to categorise concepts into themes (Tricco et al. 2016). JBI scoping review guidance recommends the use of descriptive qualitative analysis beyond primary qualitative studies, incorporating the allocation of concepts into categories (Pollock et al. 2023).

In this study, data collation and categorisation regarding the NP immuniser role in PHC were conducted through a collaborative and iterative process between the three authors. Themes were developed using a structured, stepwise approach, which involved a systematic review of the included studies, identifying patterns, categorising data, refining categories and confirming findings with team members (Tricco et al. 2016). This analytical process resulted in the identification of three key themes addressing the research question: (1) scope of practice in PHC, (2) addressing service gaps in PHC and (3) role in immunisation provision in PHC (see Table 2 Summary of included sources).

3 | Results

3.1 | Characteristics of Included Articles

From the 52 eligible full-text articles, a total of eight articles were evaluated against the specified eligibility criteria and included in the final review. The search results are presented in the PRISMA-ScR flowchart, in Figure 1, which provides a summary of the search and selection process for sources (Tricco

TABLE 1 | Study selection and Keywords.

| Population | Concept | Context | Limiters? |
|---|---|--|--|
| (‘nurse practitioners’[Mesh]) OR (‘nurse practitioner’*[TextWord]) OR (‘immunisation nurse’*[TextWord]) OR (‘immunisation nurse’*[TextWord]) AND | (‘primary health care’[Mesh]) OR (‘primary healthcare’*[TextWord]) OR ‘primary care’[TextWord]) AND | (‘Nurse’s role’[Mesh]) OR (Role*[TextWord]) OR (‘Scope of practice’*[TextWord]) | Language: English Year 2000–2023 Type of resource: E.g., journal articles (peer- reviewed, full-text and human) |

TABLE 2 | Summary of included sources.

| Article title and authors | Aim (s) | Design | Context and population | Data analysis | Results |
|--|--|--|--|--|---|
| Physician's perception of primary care nurse practitioners in Saudi Arabia Almotairy et al. (2022) | To explore physician perceptions about the supply and demand for NPs in PHC, with a view to increasing services in PHC settings. | Cross-sectional design—online survey categorised into themed questions. Recruitment invitations, with a link to complete an online survey, were sent to eligible physicians through the Ministry of Health and medical and nurse leaders at healthcare institutions. | 162 physicians working in PHC participated, with 64–97 responses. Demographic Data Among the respondents, (55.7%) were male and (18.6%) were female. Nearly (63%) reported providing PHC as part of their profession, with an average of 16.49 years of experience. | Descriptive analysis was used for demographic data, using 95% CI. Chi-square analysis was used to identify group differences between the demographic characteristics and survey items. Target sample size was 60 participants. | Participants (93%) agreed that NPs should practice to their full scope of practice. However, (45%) disagreed that NPs should receive reimbursement equal to that of physicians. NP scope of practice • Chronic disease management (19.6%) • Acute illness (20.6%) • Patient/family teaching (50.5%) • Care coordination (40.2%) Immunisation provision • Screening and immunisations (39%) |
| Evolving the role of paediatric nurse practitioners Aruda et al. (2016) | To examine and report job analysis surveys about the role of NPs, as they advance towards practising to the full extent of their education and training. | National role delineation studies (2003, 2008 and 2011) were conducted and compared by the American Nurses Credentialing Centre. | A national representative sample of paediatric NPs in current clinical practice and certified within the last 5 years, were surveyed to identify the key elements of practice needed for 'entry to practice'. Demographic data Respondents worked in: (45%) paediatric settings (36%) private practice (26%) outpatients (22%) acute care | Under the leadership of a psychometrician and the input of a content expert panel of experienced clinicians, the knowledge and skills needed to perform each of the critical tasks and activities associated with the specific PPCNP role were identified. A linking activity was conducted with a content expert panel to match each knowledge and skill with specific critical tasks and activities. Data analysis of the linking activity was used to develop a test content outline for the national certification exam, to ensure that testing remains current for entry to practice for the PPCNP advanced practice specialty. | NP scope of practice • Prescribing medications within the NP scope of practice was listed as a top priority. • Mandated reporting for child abuse, (63%) of the respondents had reported child abuse. Immunisation provision • Childhood immunisations are a priority in the United States, with over 500 cases of measles reported in 2014 |

(Continues)

TABLE 2 | (Continued)

| Article title and authors | Aim (s) | Design | Context and population | Data analysis | Results |
|---|--|---|--|--|--|
| HPV vaccine communication competency scale for medical trainees: Interdisciplinary Development Study Darville-Sanders et al. (2022) | To create a dependable and valid scale for HPV communication, assessing the proficiency of PHC providers in recommending vaccination to parents and patients. | A descriptive study to collect data via a literature review, focus groups and an expert panel to inform the scale domains and blueprint design. | Four focus group sessions were conducted to seek insight from 40 targeted students. However, only 33 of them participated. Demographic data: Participant roles: NP (61%) Physician Assistant (27%) Pharmacy (12%) | An item analysis was conducted for the responses provided in the cognitive interviews. Item statistics (means and SD), interitem correlations and reliability were examined. Data were analysed using SPSS software. | <ul style="list-style-type: none"> HPV immunisation has been a public health priority in the United States. To support effective communication, a valid and reliable 42-item HPV vaccine communication competency scale was developed. <p>Addressing Service Gaps</p> <ul style="list-style-type: none"> A standardised HPV communication scale can be used to ensure effective and consistent recommendation by healthcare providers, affecting immunisation rates <p>Immunisation provision</p> <ul style="list-style-type: none"> Studies indicate that adolescents were over eight times more likely to initiate and complete the HPV vaccine series following educational interventions |
| Characteristics of nurse practitioner practice by sampling patient encounters Deshefy-Longhi et al., (2008) | The aim of this study was to characterise NPs' practice by using reports of patient encounters to more accurately reflect practice patterns than has been previously performed. This study was part of a larger PHC survey by a consortium of 20 practice-based research networks. | A descriptive survey was developed, with the goal of collecting PHC data over a 6-month period to document and compare PHC practice in the United States of America. The data were collected immediately following NP encounters with patients. | <p>Fifty-four NPs from 45 practice sites completed the two-part survey, completing a demographic and practice form, as well as 30 patient encounter forms over a 2- to 4-week period.</p> <p>The NPs did not significantly differ in age, gender, ethnicity, years of practice or practice setting. Primary healthcare.</p> <p>Demographic Data</p> <p>Participant roles:</p> <p>Paediatrics 20% ($n = 13$), family practice 46% ($n = 30$), women's health 6% ($n = 4$), internal medicine 25% ($n = 16$) and geriatric practices in southern New England.</p> | <p>Frequencies and logistic regression on the provision of therapeutic or preventive services for practice sites were performed to investigate specific practice patterns for members as a group and among the various types of practitioners.</p> | <p>NP scope of practice</p> <ul style="list-style-type: none"> Acute healthcare (45%) Chronic disease management (30%) Health promotion (24.5%) Counselling (84%) <p>Immunisation provision</p> <ul style="list-style-type: none"> Paediatric NPs were more likely to provide education or counselling about growth and development, immunisations and injury prevention. |

(Continues)

TABLE 2 | (Continued)

| Article title and authors | Aim (s) | Design | Context and population | Data analysis | Results |
|---|--|--|---|--|---|
| Obstacles that prevent nurse practitioners in New Zealand fulfilling their roles Harvey et al. (2015) | A study was carried out to identify the contribution that NPs make to PHC, regardless of the healthcare setting. | A mixed-methods approach, this study mapped the contributions of NPs against indicators from a results-based logic model (RBLM). | College of Nurses Association (NZ) members, who were NPs, were eligible to participate. Demographic data At the time of recruitment, they were as follows: 120 registered NPs in NZ, 66 listed on the website. Of these, 35 (53%) responded – with 23 consenting to interview; 16 interviews were conducted. | Using the discourses of the NPs, combined with survey data, information was categorised into the components of the RBLM to identify how they were contributing to PHC through covert and overt activities in their clinical practice. | NPs are essential to maintain the population's health and highlight the need for policymakers to give the role a greater profile while providing more resources and support. NP scope of practice Comments suggest that most healthcare deliverables are hidden from measurements, presenting a significant gap in ongoing tracking, measuring and auditing of healthcare by NPs. Immunisation provision 82.4% of NPs indicated that they make clinical decisions and prescribe, indicating that in a PHC context, NPs have the scope of practice to prescribe immunisations |
| Characteristics of nurse practitioner practice in family health teams in Ontario, Canada Heale et al. (2018) | This study aimed to describe the characteristics of NP practices in Family Health Teams (FHTs), along with the relationships between NPs and physicians within this model. | Cross-sectional descriptive study analysed NP service and diagnostic code data collected for every NP patient encounter from 2012 to 2015. | NPs work in several settings, including physician-led, interprofessional FHTs. Eighty NPs in 34 FHTs documented all patient encounters according to service codes and diagnostic codes. NPs were able to record more than one code for each encounter. Demographic data Most FHTs employed a single NP (41.2%). Eleven of the FHTs (32.4%) were in rural settings. | Data were compared with other provincial health databases. These datasets were linked using unique encoded identifiers and analysed at the Institute for Clinical Evaluative Services. Analysis of diagnostic codes for NP care: 1. Acute 2. Episodic care 3. Uncomplicated pregnancy 4. Family planning 5. Contraceptive advice 6. Disorders of the urinary tract | Tasks within scope of practice are defined by coded services. NP scope of practice • Assessment (4.3%), • Counselling (21.3%) was the second most recorded activity. • Preventative care (11.3%) included screening and secondary prevention • One strategy for NPs to practice to their full scope in FHTs is to be assigned a group of patients. • Alternatively, NPs may carve out a specialised niche and work to their full scope of practice focusing on the care of patients with a specific condition Immunisation provision • Diagnostic and therapeutic procedures (9.2%) of visits included immunisation and urinalysis. |

(Continues)

TABLE 2 | (Continued)

| Article title and authors | Aim (s) | Design | Context and population | Data analysis | Results |
|---|--|--|---|---|--|
| Comparison of immunisation rates of adults ages 65 years and older managed within two nurse practitioner-owned clinics with national immunisation rates Wright et al. (2017) | The purpose of this study was to assess immunisation rates of adults aged ≥65 years managed by two NPs and compare the results with national immunisation rates and Healthy People 2020 goals. | A convenience sample of adults aged ≥65 years was obtained from two NP-managed clinics. The vaccine records of each individual were checked for documentation of having received five vaccines (tetanus, diphtheria and pertussis; influenza; pneumococcal polysaccharide vaccine 23; pneumococcal conjugate vaccine 13; and herpes zoster vaccine). | Adults aged ≥65 years are at increased risk for infectious diseases and ensuring that these individuals are fully vaccinated is vital. Demographic data Participants: One hundred and fifty females (70.8%) and 62 male patients (29.2%) met inclusion criteria. | SPSS version 24 was used to perform statistical analysis. Descriptive statistics including mean and standard deviation were calculated for all continuous variables (age and vaccination status). Percentage and frequencies were calculated for the categorical variables such as gender. The relationship between categorical variables was analysed using a chi-square test with a $p \leq 0.05$ considered statistically significant. | NP-managed patients at two clinics had higher immunisation rates than the national averages across all five major vaccines. Immunisation Provision <ul style="list-style-type: none"> Initially, <50% of adults aged 65 were up to date with immunisations. (77.8%) of patients aged 65 and older received the influenza vaccine, higher than the national average of (71.5%). The clinics exceeded national vaccination targets on all five vaccinations for 65 and older. The administration of vaccines has always been a key primary prevention task carried out by NPs. At both clinics, a coordinator reviewed the immunisation status of every patient before each visit. Vaccine reminders in patient charts when a vaccine was due but deferred during a visit. Reminder calls to patients ≥65 years old when influenza vaccines become available. Stocking vaccines to ensure availability. |

(Continues)

TABLE 2 | (Continued)

| Article title and authors | Aim (s) | Design | Context and population | Data analysis | Results |
|--|--|--|---|--|---|
| COVID-19 vaccination in VA home-based primary care: Experience of interdisciplinary team members Wyte-Lake et al. (2022) | To describe how the Department of Veteran Affairs Home-Based Primary Care (HBPC) team members experience provided care during the pandemic; by identifying facilitators and barriers to vaccinating veterans in-home during the COVID-19 pandemic. | A quantitative study using an online survey that included three open-ended COVID-19 vaccine-related questions. All staff members of the HBPC team were invited to participate. | Team members from 145 Veteran Affairs Medical Centres were invited to participate. Demographic data The survey was open from March to May 2021. ($n = 573$) surveys were collected from 73 sites. | Demographic data were analysed using descriptive frequencies and open-ended questions using thematic analysis. Analyses identified three themes reflective of the experience of HBPC team members discussing and administering the COVID-19 vaccine to veterans. | Three topics were identified: <ul style="list-style-type: none"> • Communication and education • Advocating for prioritisation of HBPC veterans to receive the vaccine • Logistics of delivering and administering the vaccine. Meeting service gaps <ul style="list-style-type: none"> • The NPs reported that every veteran who wanted a COVID-19 vaccine received it. • The NPs reported effective collaboration between the HBPC leadership and the pharmacy, ensuring early access to vaccines for NPs and facilitating prompt in-home vaccination during the COVID-19 pandemic. |

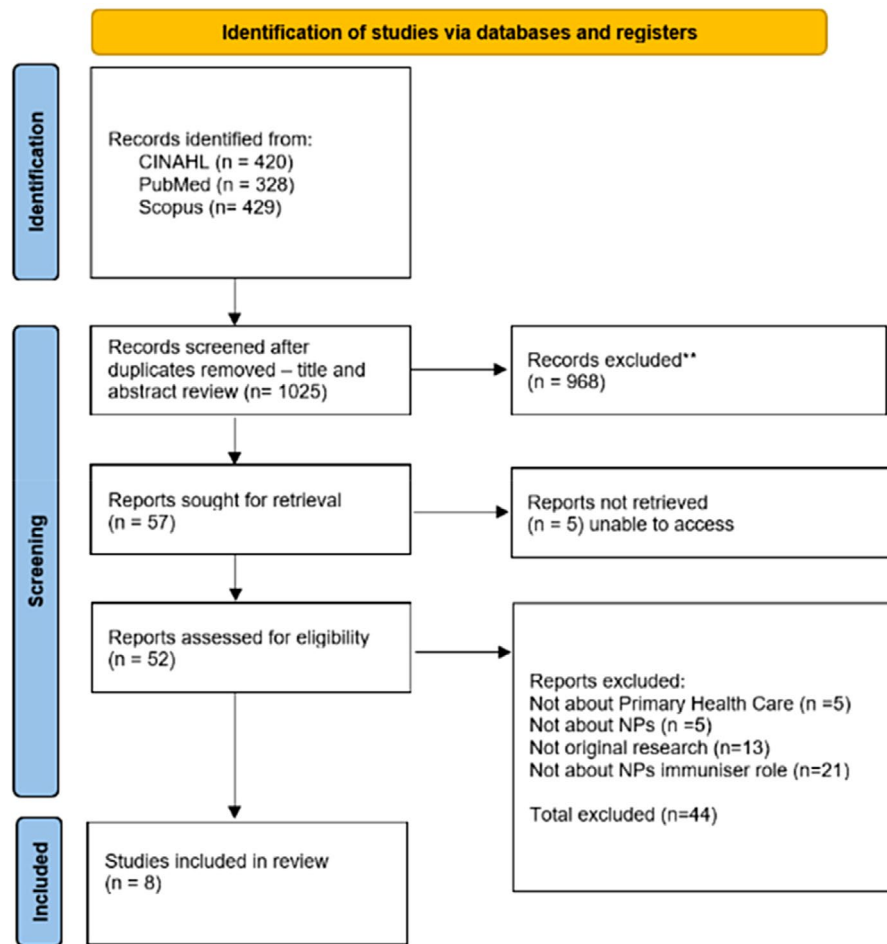


FIGURE 1 | Flowchart of literature review process conducted in accordance with PRISMA-ScR statement (Tricco et al. 2018)

et al. 2018). Most studies ($n = 5$) originated in the United States, with one study each carried out in New Zealand ($n = 1$), Canada ($n = 1$) and Saudi Arabia ($n = 1$). The articles were published between 2008 and 2022.

Seven studies used a quantitative methodology (Almotairy et al. 2022; Aruda et al. 2016; Darville-Sanders et al. 2022; Deshefy-Longhi et al. 2008; Heale et al. 2018; Wright et al. 2017; Wyte-Lake et al. 2022), while one study used a mixed-methods approach (Harvey et al. 2015).

3.2 | Nurse Practitioner Scope of Practice in Primary Healthcare

Seven studies (Almotairy et al. 2022; Aruda et al. 2016; Deshefy-Longhi et al. 2008; Harvey et al. 2015; Heale et al. 2018; Wright et al. 2017; Wyte-Lake et al. 2022) focused on the routine clinical activities of NPs in various PHC settings. These studies reported NPs delivering acute care (20.6%–45%) (Almotairy et al. 2022; Deshefy-Longhi et al. 2008) and chronic disease management (19.6%–30%) (Almotairy et al. 2022; Deshefy-Longhi et al. 2008), along with task delegation to other healthcare providers and active medication prescribing (82.4%) (Aruda et al. 2016; Harvey et al. 2015). Patient and family education was a large component of NP practice (50.5%) (Almotairy

et al. 2022), as was counselling (21.3%–84%) (Deshefy-Longhi et al. 2008; Heale et al. 2018).

Heale et al. (2018) identified a broad scope of practice that included preventive care (11.3% of encounters) and diagnostic and therapeutic procedures (9.2%), such as immunisation and urinalysis. Wright et al. (2017) discussed the role of NPs in privately managed clinics in improving vaccination rates among individuals aged 65 and older, while Wyte-Lake et al. (2022) explored innovative service delivery models, including home-based PHC services for veterans during the COVID-19 pandemic. The NP scope of practice in PHC was a recurring theme, with studies identifying role optimisation (Aruda et al. 2016), practice patterns (Deshefy-Longhi et al. 2008) and opportunities for expanding their scope of practice (Heale et al. 2018).

Further supporting the full utilisation of NPs, Wright et al. (2017) reported that NPs excelled in meeting immunisation targets, while Wyte-Lake et al. (2022) found that PHC NPs operated to their full scope of practice, administering COVID-19 vaccines to veterans during the pandemic. Almotairy et al. (2022) indicated that while (93%) of survey respondents supported NPs practising to their full scope of practice, (45%) opposed appropriate remuneration for these services. Likewise, Harvey et al. (2015) noted that healthcare deliverables associated with NPs are often excluded from measurement frameworks, resulting in a critical

gap in the tracking, evaluation and auditing of healthcare tasks performed by NPs.

3.3 | Nurse Practitioners Addressing Service Gaps in Primary Healthcare

Two articles (Darville-Sanders et al. 2022; Wyte-Lake et al. 2022) examined how NPs use communication strategies to address immunisation service gaps in PHC, specifically for the human papillomavirus (HPV) and COVID-19 vaccines, with the goal of improving community uptake of these important healthcare measures.

To address the declining HPV immunisation rates among children aged nine and adolescents in the United States, Darville-Sanders et al. (2022) developed the HPV vaccination communication scale through a descriptive study. This scale was integrated into educational programmes for newly endorsed NPs and other healthcare providers, offering experiential learning opportunities to enhance knowledge and communication about the HPV vaccine (Darville-Sanders et al. 2022). Equipped with this training, NPs effectively engaged with parents and patients to support informed decision-making, thereby improving vaccine uptake (Darville-Sanders et al. 2022). Following this intervention, adolescents were over eight times more likely to initiate and complete the HPV vaccine series (Darville-Sanders et al. 2022).

Similarly, Wyte-Lake et al. (2022) discussed how NPs in the United States addressed service gaps through person-centred, home-based primary care (HBPC) immunisation programmes for homebound veterans with limited access to PHC clinics (Wyte-Lake et al. 2022). During the COVID-19 pandemic, these programmes facilitated vaccine administration in veterans' homes, resulting in (80%) of participating veterans receiving at least one COVID-19 vaccine (Wyte-Lake et al. 2022). The HBPC team developed strong professional relationships with the veterans in their care, allowing NPs to provide targeted education, address vaccine hesitancy and respond to patient concerns (Wyte-Lake et al. 2022). This study highlighted the importance of continuous education for PHC NPs and the need for dedicated time to engage with patients, ultimately supporting higher vaccine uptake (Wyte-Lake et al. 2022).

3.4 | The Nurse Practitioner's Role in Immunisation Provision in Primary Healthcare

Six studies (Almotairy et al. 2022; Aruda et al. 2016; Deshefy-Longhi et al. 2008; Harvey et al. 2015; Heale et al. 2018; Wright et al. 2017) identified that prescribing and administering immunisations (39%) (Almotairy et al. 2022; Heale et al. 2018) are routine activities for NPs in PHC. Globally, NPs have a generalised scope of practice, with immunisation administration representing a small component of their broader role. In Saudi Arabia, PHC NPs administer vaccines as part of their preventative healthcare responsibilities (Almotairy et al. 2022). In the United States, primary care nurse practitioners (PCNPs) focus on three key areas: prescribing medications, mandatory reporting of child abuse and administering immunisations (Aruda et al. 2016). Notably,

(63%) of PCNPs surveyed by Aruda et al. (2016) reported cases of child abuse. Childhood immunisation remains a public health priority in the United States, with over 500 cases of measles reported in 2014, highlighting the essential role of PCNPs immunising the nation's children (Aruda et al. 2016).

A study conducted in the United States in 2014 found that fewer than (50%) of individuals aged 65 and older were up to date with preventative healthcare, including immunisations (Wright et al. 2017). NPs working in NP-owned clinics identified several challenges to maintaining immunisation coverage, including frequent changes in immunisation schedules, limited consultation times restricting discussions on preventive care and insufficient vaccine stock (Wright et al. 2017). To address these barriers, NPs ensured vaccine availability, cross-checked patient records with vaccination schedules and sent reminder letters to patients (Wright et al. 2017). This NP-led approach was particularly effective, as these clinics exceeded national immunisation rates for five major vaccines recommended for individuals aged 65 and older (Wright et al. 2017). Notably, NPs increased influenza immunisation rates from (71.5%) to (77.8%), exceeding national averages (Wright et al. 2017). This initiative demonstrated that NPs in PHC are well positioned to ensure patients remain up to date with immunisations, thereby reducing the risk of vaccine-preventable disease outbreaks.

Surveys conducted in the United States utilised NP patient encounter reports to document and characterise the NP scope of practice in PHC, confirming that immunisation represents a minor aspect of their overall role (Deshefy-Longhi et al. 2008). Similarly, in Canada, a 3-year study (2012–2015) analysing NP patient encounters found that immunisation was a small component of a broader role that included acute and chronic disease management (Heale et al. 2018). In New Zealand, NPs described a collaborative, multidisciplinary team PHC model where they delegate clinical duties (which could include immunisation) to other healthcare team members (Harvey et al. 2015).

Wyte-Lake et al. (2022) highlighted the logistical aspects of NP-led immunisation efforts during the COVID-19 pandemic, emphasising the importance of teamwork, trust and innovation in integrating NPs into PHC and improving community immunisation rates. Their study showcased an innovative PHC initiative where NPs delivered home-based vaccination clinics for vulnerable veterans, further underscoring the crucial role of teamwork in the success of this programme (Wyte-Lake et al. 2022).

4 | Discussion

The aim of this scoping review was to explore and identify existing primary research on the scope of practice for NPs working as NP immunisers in PHC. Although the review considered literature published between 2000 and 2023, the included studies were published between 2008 and 2022. The findings reinforce the critical role of PHC NPs in immunisation delivery (Darville-Sanders et al. 2022; Wright et al. 2017; Wyte-Lake et al. 2022). However, despite existing service gaps that NPs could potentially address, there remains limited research on the specific role of NPs as immunisers in PHC.

A recurring theme in the literature frequently is the lack of awareness and ambiguity surrounding the NP's scope of practice in PHC. Although the NP role has been evolving since its inception in the United States in 1965, many countries have been slow to enable NPs to work to their full scope of practice (Aruda et al. 2016; Harvey et al. 2015). Variability in NP scope internationally, influenced by individual competencies, experience and legal or departmental policies Schlunegger et al. (2023), further complicates collaboration within multidisciplinary teams. This occurs despite NPs possessing master's level education, extensive clinical experience and advanced skills that allow them to practice independently (Harvey et al. 2015). Cody et al. (2020) suggest assigning NPs a task-orientated focus, such as a specialised NP immuniser role, which may facilitate their full scope of practice. However, effective implementation requires active NP involvement in collaborative team discussions within PHC to ensure clarity regarding their scope of practice, including immunisation, before task allocation (Cody et al. 2020).

Immunisation is a key component of PHC, particularly in health promotion and disease prevention strategies (Niederhauser 2011). NP Immunisation providers must remain informed about emerging infectious diseases and evolving immunisation schedules (Niederhauser 2011). By systematically reviewing a patient's immunisation history and recommending necessary vaccines, NPs can help reduce patient morbidity and mortality from vaccine-preventable diseases (Deutscher and Johnson 2015). Although immunisation incurs costs for individuals and governments, it remains a cost-effective public health intervention (Niederhauser 2011).

This review identifies opportunities to develop and implement an NP-led model of care in PHC settings to address immunisation service gaps and meet increasing healthcare demands. NP-led clinics are well positioned to enhance vaccination uptake, particularly by reminding patients who may be unaware of their immunisation status (Wright et al. 2017). The literature underscores the importance of NP knowledge and communication regarding individual vaccines and potential side effects, as NPs play a key role in bridging service gaps during the administration of COVID-19 and HPV vaccines. Wright et al. (2017) found that eliminating logistical barriers, such as ensuring vaccine availability, significantly improved vaccination rates. As vaccine administration remains one of the most important public health initiatives within the NP scope of practice, clear communication regarding vaccine benefits and possible side effects is essential for improving community immunisation rates (Wyte-Lake et al. 2022).

Despite the integral role of NPs in immunisation delivery, this review identified a gap in research specifically examining NPs who specialise in immunisation provision within PHC. This may be due to the perception of NPs as generalists or their delegation of immunisation tasks to other team members. Darville-Sanders et al. (2022) emphasised the growing need for NPs and other healthcare professionals to lead and coordinate immunisation programmes, particularly as global immunisation rates continue to recover from the impact of the COVID-19 pandemic (Wright et al. 2017). NPs specialising in immunisation provision within PHC are well positioned to contribute to efforts aimed at reversing declining immunisation rates and strengthening preventive healthcare initiatives.

5 | Limitations

This review has several limitations. Despite conducting an extensive literature search, there remains a possibility that certain articles were not captured in our databases or within peer-reviewed literature and were not incorporated in this scoping review. Some of the literature that reviewed the responsibilities and professional boundaries of NPs was authored by physicians and practice managers, rather than by NPs themselves. This trend may suggest the independent nature of the NP role in PHC, indicating a lack of collaboration in providing individual perspectives on role definition and professional boundaries.

6 | Conclusions

This scoping review identified limited research on the scope of practice of NP immunisers in PHC roles. The term 'nurse practitioner immuniser' was rarely mentioned in the literature; instead, immunisation was typically described as part of broader NP responsibilities rather than a distinct speciality. However, the reviewed studies emphasised the important role NPs can play in addressing immunisation service gaps in PHC. Ongoing education for NPs in PHC could support the development and recognition of this role while also providing greater clarity regarding their scope of practice for both colleagues and patients.

Globally, the underutilisation and limited recognition of NP Immunisers often stem from a lack of awareness and uncertainty surrounding their scope of practice. Strengthening communication between NPs and multidisciplinary teams could help clarify the NP's role and highlight their contributions, potentially leading to greater integration of NP-led immunisation initiatives within PHC. This review synthesises findings from eight studies, identifies gaps in the existing literature and suggests areas for further research on the NP immuniser role in PHC. Future studies should explore the potential benefits of NP-led immunisation services in addressing service gaps and improving vaccination coverage.

7 | Relevance to Clinical Practice

This scoping review highlights the essential role of NPs in addressing immunisation service gaps within PHC. Enhanced collaboration among healthcare team members and a well-defined NP scope of practice in PHC would improve team dynamics and patient health outcomes. Continued education focused on PHC would further support the NP role, reinforcing their contributions in this area. Advocacy from both practice managers and NPs would increase their presence in PHC, leading to better immunisation outcomes both locally and globally.

Author Contributions

Christine Schoenfisch: conceptualisation, methodology, validation, investigation, formal analysis, resources, data curation, writing – original draft, writing – review and editing and project administration. **Kate Kauter:** conceptualisation, methodology, formal analysis, data curation, writing – original draft and writing – review and editing. **Leah**

East: conceptualisation, methodology, formal analysis, data curation, writing – original draft and writing – review and editing.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that supports the findings of this study are available in the [Supporting Information](#) of this article.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.