The response and impact of advanced practice nurses for addressing health and health system needs resulting from the COVID-19 pandemic

Stakeholder Report
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Project Background

As clinical leaders and experts, advanced practice nurses (APNs) have been at the forefront of healthcare system responses to the COVID-19 pandemic around the world. APNs pivoted their practices to respond to the health needs of different patient populations by designing and delivering healthcare services in new models of care including the use of virtual care formats and other innovative eHealth solutions. APNs have also led the introduction of innovations to deliver safe, evidence-based care. However, the full extent of how APNs have responded to address emerging health and healthcare system needs as a result of the pandemic is unknown.

In relation to COVID-19, this project engaged decision-makers, practitioners, educators, and researchers in a series of virtual meetings to examine how APNs have responded to address health and health system needs from a national and global perspective. Understanding how APNs have contributed to the pandemic response worldwide is essential for identifying policies that support the deployment of APNs and expansion of their practices and roles. Through this project, we hope to inform future pandemic and health workforce planning and research to support the long-term sustainability of effective APN innovations.

Project Objectives

1. Describe how APNs have responded to COVID-19.
2. Identify and describe the features of innovations led by or involving APNs.
3. Identify and describe how APN innovations have been evaluated.
4. Describe the impact of COVID-19 on the advanced practice nursing workforce and the professional practice of APNs.
5. Identify the challenges and solutions required to support the optimal deployment and implementation of APNs.
6. Identify research and policy priorities for optimizing the advanced practice nursing workforce and innovations to address the short and long-term impact of COVID-19 and future pandemics.

Purpose of this Report

This report provides an overview of the initial findings from the synthesis of existing data, as well as the regional stakeholder meetings and consensus meetings. More detailed analysis of the data will be included in forthcoming publications and presentations related to the project.

Project Phases

Phase 2: Regional Stakeholder Meetings

Phase 1: Synthesis of Existing Data

Scoping review
- To identify and synthesize global examples of APN innovations in response to COVID-19
- 4 online databases searched to identify peer-reviewed articles published in English between January 2020 - January 2021
- 374 articles identified and assessed by the research team for applicability; 42 published articles were relevant and included in the review

Database of Health Workforce Strategies in Response to the COVID-19 Pandemic
- Searched to identify examples of innovations involving APNs
- From 665 entries, 317 were relevant to nursing, 35 were specific to APNs and included in data synthesis

Phase 2: Regional Stakeholder Meetings

Regional Meetings
- Between late April and early June 2021, 4 international regional meetings took place:
  - Canada; Americas; Africa, Europe, & Middle East; Asia & Australasia
- 117 APN stakeholders from 36 countries attended, including:
  - APNs, administrators, educators, researchers, policy makers, and nursing association leaders
- Meeting participants discussed:
  1. How APNs and their expertise were utilized to respond to COVID-19
  2. The characteristics of healthcare innovations that involved or were led by APNs in response to COVID-19
  3. How the pandemic affected APNs, their professional practice, and workforce
- Small and large group discussions involving a computer mediated approach were used to generate responses for each question
- Consensus strategies were used to rank the importance of ideas presented

Phase 3: Consensus Meetings

Consensus Meetings
- All regional stakeholders were invited to participate in 1 of 2 consensus meetings held in June 2021
- 70 stakeholders from 25 countries participated
- Participants were asked to:
  1. Identify barriers to the optimal utilization of APNs to address the short and long-term impact of COVID-19
  2. Identify solutions for addressing these barriers
- Regional and consensus meeting results were used to:
  - Formulate recommendations about best practices and policies to support the effective use of APNs
  - Identify research and policy priorities to improve advanced nursing practices and service delivery models
  - Establish new partnerships and networks to support future research nationally and internationally

Objective 1: How APNs responded to COVID-19

	Synthesis of Existing Data	Regional Stakeholder Meetings
Providing Virtual care	• 18 (43%) publications and 9 (26%) database entries included the use of telephone and/or videoconferencing to provide patient care or interprofessional communication	• Expanded use of technology including virtual care was the most frequently reported way APNs were used across all regions • It ranked as one of the most important items in all meetings
Enabling Redeployment	• 6 (14%) publications detailed the redeployment of APNs to COVID-19 screening/testing (n=2); intensive care units (n=3); emergency departments (n=1); long-term care facilities (n=1) • 5 (14%) of database entries detailed the redeployment of APNs	• Stakeholders in all meetings frequently cited the redeployment of APNs to other clinical areas, as well as to COVID-19 specific areas including screening sites, vaccination clinics, and COVID-19 units or isolation centres
Transforming Care	• 9 (21%) publications described modifications made to patient care services related to: identification and management of patients with COVID-19 at high risk for complications (n=4); mental health (n=2); palliative care in the context of a national opioid shortage (n=1); and restructured services due to COVID-19 (n=2)	• During the Canadian and African/European/Middle Eastern regional meetings, stakeholders noted how APNs transformed their roles to lead and respond to dynamic health and health system needs • Stakeholders described APN contributions to transformed services, including new outdoor clinics, increased use of team-based care, and creation of new units within organizations
Optimizing APN Roles Through Legislative Changes	• 6 (14%) publications outlined legislative changes made during the pandemic to expand workforce capacity and increase patient access to care • All 6 publications were from the United States and included changes made at federal and state levels • Changes included executive orders and emergency waivers allowing APNs to increase their scope of practice, bill for telehealth services or virtual care appointments, and practice autonomously without physician collaboration or oversight • 6 (17%) database entries related to APNs expanded scope of practice during the pandemic, and 5 (14%) referenced emergency licensure	• Emergency legislation providing increased APN scope of practice was cited by stakeholders, with those from the Americas meeting viewing the issue as of particular importance • In some cases, legislative changes led to the removal of barriers preventing APNs from working to their full scope • Other legislative changes resulted in a new expanded scope of practice • Some stakeholders felt APNs gained more autonomy and were able to take on more responsibility in team-based models of care throughout the pandemic

	Synthesis of Existing Data	Regional Stakeholder Meetings
Promoting Provider Wellbeing	• 4 (10%) publications detailed innovations focused on promoting healthcare provider wellbeing	• Though not frequently referenced, stakeholders felt that important work was done by APNs to support fellow healthcare providers by addressing their mental health needs
Promoting Best Practice Through Provider Education	• 8 (20%) publications described innovations aimed at healthcare provider training and education: 6 related to learning about care provision during COVID-19; 4 included guidance on providing palliative care; 3 involved education sessions; and 3 included provision of resources (e.g., protocols, guidelines, toolkits)	• Stakeholders from all regions highlighted the role of APNs in developing and providing interventions targeting healthcare providers. This included providing education and training; and communicating with other providers and administrators • In addition, APNs played a pivotal role to develop and implement evidence-informed policies and practices.
Augmenting Human Resources	• 3 (7%) publications discussed increasing capacity and surge planning • 1 (2%) publication outlined the recruitment of nurses to staff respiratory illness clinics • 7 (20%) database entries specified the recruitment of APNs to combat the impacts of COVID-19 on the healthcare system	• Often described as "filling the gap", stakeholders in all meetings described APNs stepping into different roles within the healthcare team to address staff shortages

Objective 2: Features of innovations involving APNS

Descriptions of the innovations involving APNs were extracted during the synthesis of existing data and were also discussed during the stakeholder meetings.

Information regarding the practice setting where innovations took place was largely unavailable in the Workforce database.

Specialty practice settings reported in the scoping review included oncology, palliative care, orthopaedics, diabetes, cardiology, psychiatry, and respirology.

Regional meeting stakeholders mostly frequently mentioned innovations in intensive care units, followed by long-term care, emergency departments, primary care, palliative care, and public health

Scoping review publications by practice setting

- Primary care: 7
- Long term care: 4
- Inpatient: 8
- Outpatient: 4
- Emergency department: 3
- Speciality: 12
- Not specified: 6
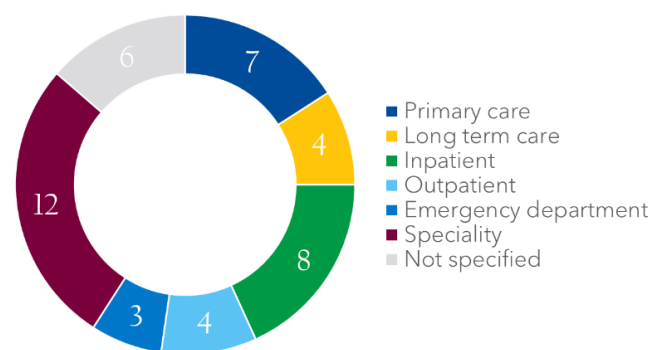
Data on the patient population targeted by innovations was limited. Scoping review data focused on the targeted population by age, with only 22 of the 42 articles specifying this information; 16 were specific to adults, 4 to all ages, and 2 to pediatrics.

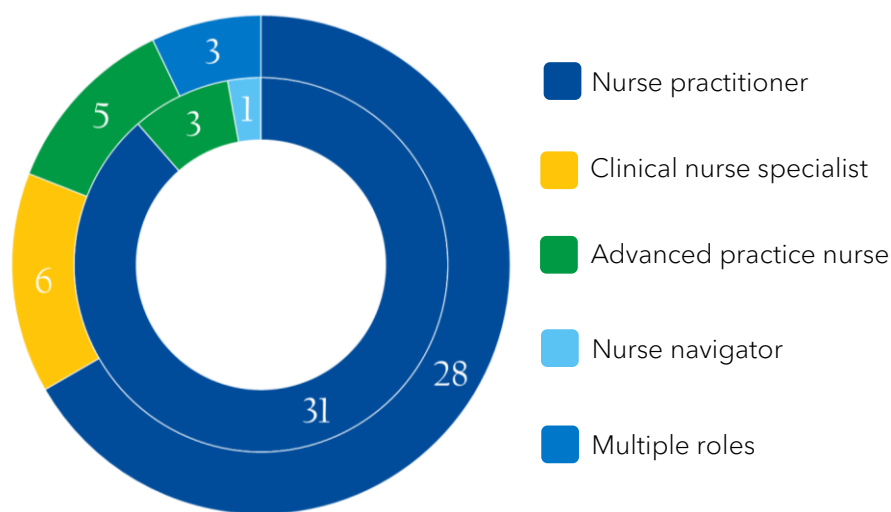Regional meeting stakeholders referred to several specific patient populations, with vulnerable populations being the most frequently cited, followed by older adults or seniors, patients in critical care, and Indigenous peoples.


Nurse practitioners were the most frequently cited type of APN in scoping review publications (67%) and database entries (89%). APNs were more frequently involved in team-based rather than APN-led innovations.

Scoping review publications and database entries by type of APN role

- Nurse practitioner
- Clinical nurse specialist
- Advanced practice nurse
- Nurse navigator
- Multiple roles

Outer ring = scoping review publications
Inner ring = database entries

Scoping review publications and database entries by APN involvement

- Database
- Scoping Review
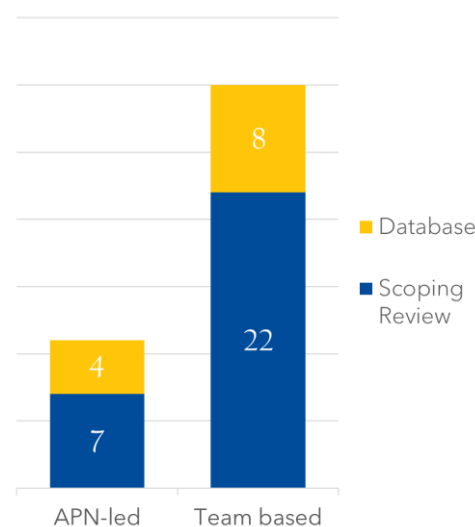
During the regional stakeholder meetings, participants from all regions frequently cited the characteristics of APNs themselves as an important aspect of healthcare innovations during the pandemic. This included being knowledgeable, flexible, and creative. These characteristics facilitated the rapid responsiveness of APNs to address health needs and gaps in service delivery as they emerged.

The increased use of technology to support virtual care practices was another prominent theme, with APNs in all regions incorporating technology into their practice.

All regions described the work of APNs during the pandemic as being patient-centred and population focused, highlighting that the way in which APNs provided care was important.

Other commonly reported characteristics of APN innovations were that they were evidence-informed and that they optimized APN expertise and scope of practice.

Objective 3: Evaluation of innovations

Robust evaluations of COVID-19 innovations involving APNs are lacking, largely due to the urgency of responding rapidly to the immediate impacts of the pandemic. During the regional meetings, stakeholders stated the importance of evaluations, and several participants stated that evaluations are now underway. Evaluations reported in the scoping review publications were limited with only 16 of 42 publications describing outcomes of innovations. These outcomes related to staff feedback (n=5); patient satisfaction (n=3); staff education sessions (n=3); clinical outcomes (n=2); number of visits/procedures completed (n=2), and cost (n=1). Despite the limited data available, all 16 publications demonstrated positive outcomes as a result of the innovations.

Objective 4: Impact of COVID-19 on APNs

During the regional meetings, stakeholders were asked to discuss the impact of COVID-19 on APNs, their professional practice, and the APN workforce overall. Both positive and negative impacts were identified.

Negative impacts

Of all the negative impacts discussed by stakeholders, mental health issues and burnout were the most frequently cited and highest ranked impact across all regions.

Changes to APN role responsibilities was a common theme with both negative and positive impact. When not consulted or utilized in ways that capitalized on their expertise, APNs felt devalued and concerned about the future of their roles. Increased attrition was also mentioned as a negative impact on APN role development.

Less frequently cited negative impacts included: restrictions on scope of practice, restrictions on nursing education, reduced quality of care, exposure to COVID-19, social isolation, and reduced research activity.

Positive impacts

In all regional meetings the increased recognition of APNs by the public and by government and healthcare system stakeholders was highlighted as a key positive impact.

Participants also viewed increases to APN scope of practice and expanded roles and responsibilities as a positive outcome.

Canadian stakeholders felt the pandemic led to new opportunities for APNs to take on leadership roles and participate in decision-making.

Innovations in APN education were discussed by the Canadian and African/European/Middle Eastern stakeholders, while innovations related to technology were raised in Canada and the Americas as a positive outcome of the pandemic.

Stakeholders from the Americas and Africa/Europe/Middle East meetings viewed the expansion of team-based care as a positive outcome.

Objective 5: Identify challenges and the solutions

During the consensus meetings, stakeholders were asked to identify key barriers to the optimal utilizations of APNs globally. These were ranked in order of priority and further discussed to identify potential solutions. Many of these barriers and solutions are not new – but the framing of the solutions are a bit different due to the international audience and pandemic. Below are the identified barriers in order of priority, and the solutions proposed to address them.

Regulatory policies that limit APN scope of practice and role autonomy

- Strengthen the capacity of APNs to advocate for regulatory policies that optimize their roles
- Promote international collaboration to standardize competencies, develop evidence-informed guidelines, and promote consistent policies for APN regulation
- Strengthen country-level leadership within the nursing profession to influence and lead policy development to support APN education, regulation, and credentialing

Imbalance of power and opportunities to influence healthcare policy and Decision-Making

- Strengthen APNs' voice, visibility, and leadership in healthcare policy and decision-making
- Strengthen the nursing profession to lead and Influence healthcare policy and decision-making
  - At the international level – continue with Nursing Now
  - Collaboration between nurses at practice, education, and regulatory levels
  - Get more nurses into influential leadership roles
  - Leverage gains made during the pandemic and be policy strategic and politically savvy

Lack of stakeholder awareness, understanding, and support of advanced practice nursing roles

- Apply knowledge translation principles to engage stakeholders and promote evidence-informed policy and decision-making for the effective use of APN Roles
  - Knowledge dissemination
  - Stakeholder engagement
  - Tailor evidence to address the information needs of different stakeholder groups

Insufficient and inequitable funding and reimbursement models for advanced practice nursing roles

- Collaborate with healthcare funders to implement and evaluate innovative funding models that support APN roles
- Advocate for stimulus funding to promote APN recruitment and retention

Poor access to and inadequate advanced practice nursing education

- Strengthen the consistency of APN competencies and education curricula across countries
- Address specific content gaps in APN curricula related to pandemic response and crisis management; developing advocacy, leadership, and consultation skills; and understanding of health policy
- Establish academic-clinical practice partnerships to increase access to learning opportunities related to clinical practice, leadership, and research
- Foster the professional development and retention of APNs through access to continuing education and mentorship

Negative impact of the pandemic on APN mental health and burnout

- Create practice environments that foster APN resilience and mental well-being through education and supports

Inadequate advanced practice nursing role implementation in organizations/practice settings

- Establish a comprehensive organizational strategy
  - Leadership/governance, workforce planning, resources, and policies
- APN leadership to promote optimal role implementation
- Promote interprofessional collaboration and access to interprofessional care that includes APNs
- Emphasize holistic, patient-centered approaches to care that optimize APN expertise
- Optimize the use of technology for healthcare delivery involving APNs

Insufficient supply and disparate deployment of APNs to meet health needs

- Develop a flexible and diverse advanced practice nursing workforce
- Introduce stimulus funding to develop more APNs

Lack of evidence about the impact and benefits of advanced practice nursing roles for health systems

- Increase capacity to evaluate and conduct research about advanced practice nursing roles
- Increase the capacity of APNs to participate in research relevant to their roles
- Conduct research in key areas to demonstrate the impact of advanced practice nursing roles

At the consensus meetings, stakeholders identified that a multi-pronged approach would be needed to address the range and complexity of barriers to optimizing the use of APN roles for the current and future pandemics.

As illustrated in this diagram, our analysis demonstrated that each of the recommended solutions could be mapped to at least one of three responsible stakeholder groups: the nursing profession, health care organizations responsible for care delivery, and APNs themselves. In addition to organizations, the focus of the solutions could occur at national/regional and/or international levels.

While some solutions are specific to a stakeholder group, many were identified as the shared responsibility of APNs, organizations, and the nursing profession and highlight the need for an increasing level of international collaboration amongst APNs and within the nursing profession.

- Consistent competencies/curricula, address curricular gaps (I & N)
- Collaborate with funders (N)
- Research on APN impact (N)
- Leadership (I & N)
- Develop flexible & diverse workforce (I & N)
- Collaborate on competencies, guidelines & policies (I)

- Establish a comprehensive organizational strategy

- Academic-clinical practice partnerships
- Foster professional development (N)
- Interprofessional collaboration/care (N)
- Strengthen profession to lead /influence (I &N)

Level of Focus
I = International
N = National or Regional

- Strengthen APN capacity to advocate for regulatory policies that optimize roles

- Leadership for optimal role implementation
- Engage stakeholders & promote evidence-informed policy/decision-making (I & N)
- Foster APN resilience
- Holistic, patient-centered care
- Evaluate/ conduct research on APN roles (I & N)
- Increase APN participation in research (I &N)
- Use healthcare technology
- Strengthen APN voice, visibility, & leadership in policy/decision-making (I & N)

Conclusions

The magnitude of healthcare needs triggered by COVID-19 created opportunities to leverage and enhance the utilization of APNs and their leadership, clinical expertise, and expanded scope of practice.

APNs have been central leaders in the pandemic response with multi-level impact in healthcare teams, practice settings, organizations, communities, and health systems.

APN leadership has resulted in innovations that have:
- Enabled the use of virtual care and other healthcare technologies,
- Improved access and quality of care for patients with and without COVID-19,
- Provided effective management of physical and human resources, especially in team-based models of care, and
- Addressed the mental health needs and concerns of patients and healthcare providers.

The challenge will be to sustain and leverage the progress made to further advance APN roles and their integration within health systems around the world.

Project results identify international priorities and consensus among global stakeholders about recommendations for optimizing the utilization of APNs to address the short and long-term impacts of the current and future pandemics. Underlying these recommendations is the importance of ongoing stakeholder collaboration at national and international levels.

APNs, the nursing profession, and healthcare organizations share the responsibility for implementing these recommendations.

Acknowledgements