INTERNATIONAL COUNCIL OF NURSES

COVID-19 AND THE INTERNATIONAL SUPPLY OF NURSES

REPORT FOR THE INTERNATIONAL COUNCIL OF NURSES

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ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

Introduction

This brief was commissioned by the International Council of Nurses (ICN). It provides a snapshot assessment of how the COVID-19 pandemic is impacting on the global nursing workforce, with a specific focus on how patterns of nurse supply and mobility may change "after" COVID-19. The brief uses the recently published "State of the World's Nursing" (SOWN)[1] report as a reference point and frame for policy consideration.

The impact of COVID-19 on the nursing workforce has been pronounced across the world. Nurses are at the frontline of the response to the virus, are central to successful progress in suppressing it, and will be the mainstay of post COVID-19 health systems. This has been widely acknowledged, but has not come without cost. Nurses have fallen ill or died, often because of poor provision of personal protective equipment (PPE), and many others are experiencing work related stress and burnout. ICN has recently highlighted the need for more effective monitoring of infection rates, mortality and assaults on nurses, at the World Health Assembly in May 2020[2].

The brief is a snapshot which focuses on an examination of nurse supply in this broader context of "COVID-19 and beyond", to highlight policy challenges and set out policy options. The development work for the brief was conducted in May/June 2020.

Pre-COVID-19 patterns of nurse supply and mobility

The SOWN report highlighted key aspects of the global nursing workforce profile, supply and mobility, which present a pre COVID-19 picture of the nursing workforce:

- The global nursing workforce is estimated at 27.9 million nurses; nine out of every ten nurses worldwide is female.
- The global shortage of nurses is estimated at 5.9 million nurses.
- Nearly all (89%) of these shortages are concentrated in low- and lower middle-income countries.
- WHO Regions with the lowest density of nurses (African, Eastern Mediterranean and South-East Asia regions) also had the lowest graduation rates (7.7, 7.1 and 12.2 graduate nurses per 100 000 population, respectively).
- High income countries had more than three times the graduation rate (38.7 graduate nurses per 100,000 population) as did low income countries (10.4).
- One out of six of the world's nurses are expected to retire in the next 10 years, meaning that 4.7 million new nurses will have to be educated and employed just to replace those who retire; higher rates will be evident in some high income countries.
- One in every eight nurses practises in a country other than the one where they were born or trained.

"Self-sufficiency" and international supply of nurses

With a global shortage of almost six million nurses, there is a risk that international outflows of nurses can undermine the preparedness of some countries to meet healthcare demands; this risk could be exacerbated further during COVID-19, if existing deficits of nurses are worsened. The brief examines the extent to which high income countries are "self-sufficient", by investing in training their own nurses, or alternatively are reliant on active international recruitment to meet demand. Key points in relation to self-sufficiency and international supply of nurses are:

- In the selected OECD countries examined in this report, the nurse graduation rate was more than four times higher in Australia (82 nurses graduating per 100,000 population) than in Italy (21);

other countries reported to have relatively low graduation rates were Chile (24), Portugal (24), and the UK (27).
- 550,000 foreign trained nurses are working across the 36 high income OECD member countries (up from 460,000 in 2011). This includes 197,000 nurses in USA, 100,000 in the UK, 71, 000 in Germany, and 53,000 in Australia.
- A loose measure of country "self-sufficiency" in nurses can be determined by assessing the percentage of the total nursing workforce in a country that was foreign trained - the higher the percentage, the less the country is self-sufficient; across high income OECD countries this is as high as 26%; in some small states and countries in the Gulf, it is as high as 97%.
- The annual trend in the level of inflow of nurses to some destination countries has varied markedly across time, highlighting a long-term approach to controlling inflow.
- There is a second international flow to consider - individuals who move to another country, specifically to undertake nurse training, often in the anticipation of staying on when qualified to practice.

Long-term reliance on inward international inflow of nurses is the antithesis of "self-sufficiency", and is a likely marker of a country that is not investing sufficient funding and effort in training adequate numbers of nurses to meet its own demands. These destination countries are attracting nurses to be internationally mobile, to move in search of better earnings and career prospects, and to help fill the gap between increasing demand and lagging domestic supply of nurses.

Supply trends in source countries

It is equally important to develop a good understanding of the level of outflow of nurses from source countries, and the reasons for their mobility:

- OECD reports that the highest emigration rates for native-born nurses exceeds 50% in 20 countries, mainly small island states in the Caribbean and in the Pacific, and some countries in Africa.
- OECD also reports there are almost 240,000 Philippine born nurses working in OECD countries, and almost 90,000 Indian born nurses.

- Outflow of nurses from the Philippines has been around 15,000 to 20,000 per annum in recent years, but the annual number of nurses who have passed the national licensing exam has dropped significantly, from about 45,000 in 2012, to less than 10,000 in 2018.
- In India there were only 30 colleges training to B.Sc Nursing level in 2000; this had grown to 1,326 by 2010, and 1,968 by 2019.

OECD reports that the highest country level emigration rates for native-born nurses exceed 50%. The higher the emigration rate, the more the domestic nursing workforce of the country has been depleted by international outflows.

COVID-19 impacts on the nursing workforce

This brief reports that COVID-19 has had variable impact on the nursing workforce in different countries, but examines a core group of factors. It identifies three different phases of COVID-19 impact and policy response (first wave, transition and the "new normal") and identifies key nurse workforce policy issues at each phase.

Many countries were experiencing shortages of nurses before COVID-19. The impact of COVID-19 has exposed these staffing gaps. It is also likely that in countries where the impact of COVID-19 has been significant, there will be further short-term reductions in the immediate domestic supply of nurses because some staff will have burned out, and will be absent for a short or long term period. Others will reduce their working hours or will retire early.

Countries must give serious consideration to maintaining the attractiveness of nursing as a career by the provision of fair pay and conditions of employment, and career prospects, in order to ensure that the mid- to long-term supply of new nurses is not compromised. They must also review if the country level capacity of the domestic education system, in terms of the projected size and skill profile of future student nurse cohorts, will be sufficient to sustain nurse supply.

Policy actions for effective post COVID-19 international supply of nurses

COVID-19 has exposed the vulnerabilities of nurse supply flows, domestically and internationally. Its impact at country level has been to highlight further any existing nurse supply gaps and the effect of staffing shortages. Internationally, its short-term impact has been to disrupt international supply, as borders close, travel is interrupted and some countries restrict outflow.

SOWN had reported a shortfall of almost six million nurses immediately pre-COVID-19. SOWN also reported that nine out of every ten nurses worldwide are female. This brief strongly supports the need for nurse workforce policies and policy implementation to have an overarching objective of creating decent work for women and closing gender gaps in leadership and pay"[3].

As countries transition to a "new normal", beyond the immediate impact of the current pandemic they will have several policy options when it comes to addressing nurse supply.

"Do nothing": …and risk undermining progress towards the attainment of UHC, and the overall global response to any future pandemic waves.

In this default scenario, some, but not all, high income destination countries will continue to rely to a significant extent on international inflow of nurses, as they did pre-COVID-19. In high income countries where COVID-19 has hit deep, this trend may be exacerbated, if the current domestic nursing workforce is depleted by absence and burnout, and demand for healthcare increases even further.

Put simply, without country level policy change related to the nursing workforce, supported by international organisations, pre-COVID-19 trends of increasing flow of nurses from low to high income countries are likely to continue, and the iniquitous mal-distribution of nurses may become more pronounced. This "do nothing" option risks undermining both country level progress towards the attainment of UHC, and the overall global response to any future pandemic waves.

Frame policy action using the WHO Global Code of Practice on the International Recruitment of Health Personnel

Endorsed by all WHO member states in 2010, the Code sets out a framework for a managed and ethical approach to international recruitment. The SOWN report has recommended that countries and regulators should strengthen the implementation of regulations governing international mobility of the nursing workforce, and that countries and international stakeholders should reinforce the implementation of the WHO Global Code of Practice[4]. The Code has recently been reviewed by an independent Expert Advisory Group (EAG), who made recommendations for improvement in implementation[5].

Taking action on international nurse supply: key post-COVID-19 policies at national and international level

The nursing workforce has been central to COVID-19 response effectiveness in all countries. This brief has highlighted that both the immediate and longer lasting effects of COVID-19 could have damaging direct and indirect effects on nurse supply, at national level and globally. This could undermine future responsiveness to pandemics, as well as broader health system effectiveness.

To mitigate these damaging effects, and to improve longer term nurse workforce sustainability, there is a need, as both SOWN and OECD have recently noted, for a co-ordinated policy response to the international supply of nurses.

At country level, this will require implementing policy bundles with two inter-related objectives: to improve retention of domestically trained nurses, and to ensure adequate domestic training capacity. This requires:

- **Assessing and improving nurse workforce data** in order to be able to understand the current profile of the profession, and shape effective policy.
- **Reviewing, and if necessary expanding, the capacity of the domestic nurse education system** to meet demand, and to sustain long term nurse supply.
- **Assessing and where necessary improving retention of nurses and the attractiveness of nursing as a career**, by ensuring that the risk of COVID-19 burnout of nurses is addressed,

and by the provision of fair pay and conditions of employment, structured career opportunities, and access to continuing education.

- **Implementing policies to enable the nursing workforce contribution to be optimised** through supporting advanced practice and specialist roles, effective skill mix and working patterns, teamworking, and provision of appropriate technology and equipment. This will contribute to retention and attractiveness of nursing, and should include a focus on maintaining an enabling regulatory and legislative framework.
- **Monitoring and tracking nurse self-sufficiency**, by using the self-sufficiency indicator of level of percentage reliance on foreign born or foreign trained nurses, which gives national policy makers an insight into the extent of their dependence on (and potential vulnerability to) international nurse supply.

At international level the policy response must be framed by fuller implementation of the WHO Code objectives. The driver for international action is that lower income countries will continue to be vulnerable to international outflow of nurses, even if all the domestic polices to improve nurse supply were implemented. The necessary actions must be agreed and co-ordinated between countries and international organisations, including ICN, ILO, OECD, World Bank and WHO:

- **Commitment to effective monitoring of international flows of nurses**, based on complete national datasets using standard measures, rapid analysis, and timely publication, with global coverage, and including country level reporting on nurse "self-sufficiency".
- **Commitment to supporting, implementing, documenting and evaluating effective and ethical approaches to managed international supply of nurses**, such as the use of country-to-country bilateral agreements[6], and fair and transparent recruitment and employment practices.
- **Commitment to supporting regular and systematic national nurse labour market analysis and workforce projections, particularly in resource constrained countries**, by the provision of technical advice and assistance, data improvement, independent analysis, and multi-stakeholder policy dialogues to agree priority policy actions on domestic nurse supply and retention.
- **Commitment to investing in nurse workforce sustainability in small states, lower income states, and fragile states, most vulnerable to nurse outflow**, by building on the lessons of the UN High Level Commission on Health Employment and Economic Growth[7], which demonstrated the long-term economic, social and population health benefits of funding expansion of the health workforce.

2020 is the Year of the Nurse. It has also become the year of the COVID-19 pandemic. If these country level and international nurse workforce policy responses are implemented effectively in the next few months and beyond, there can be hope for the future sustainability of supply of the profession.

1. INTRODUCTION

The brief was commissioned by the International Council of Nurses (ICN). It provides a snapshot assessment of how the COVID-19 pandemic is impacting on the global nursing workforce, with a specific focus on how patterns of nurse supply and mobility may change "after" COVID-19. The aim is to help inform the necessary policy debate on how health systems, countries and international organisations should respond to the vital issue of improving future supply of nurses and reducing worldwide nursing shortages, in order to improve health system responsiveness and resilience.

The brief uses the recently published "State of the World's Nursing" (SOWN)[8] report as a reference point and frame for policy consideration. SOWN was published in April 2020 and is the first ever global assessment of the nursing workforce. SOWN uses data from 2018-19, and as such it provides an immediate "pre-COVID-19" picture of the global profile of the nursing workforce. The key message from SOWN was that global shortages of nurses were undermining many countries' abilities to meet the UN Strategic Development Goals, (SDGs), and achieve Universal Health Coverage (UHC).

The impact of COVID-19 on the nursing workforce has been pronounced, across the world. Nurses are at the frontline of the response to the virus, are central to successful progress in suppressing it, and will be the mainstay of post COVID-19 health systems. This has been widely acknowledged but has not come without cost. Nurses have fallen ill or died, often because of poor provision of personal protective equipment (PPE), and many others are experiencing work related stress and burnout.

Assessing and responding to the impact of COVID-19 on the physical and mental well-being of nurses is an urgent concern, and will also have long term consequences; these are critical issues for the sustainability of the health workforce. ICN has recently raised the issue of more effective monitoring of infection rates, mortality and assaults on nurses, at the World Health Assembly in May 2020[9].

The scale of the impact on nurses has varied country by country. The incidence of COVID-19 and its effect on population health has varied in different regions and areas, and at different times, since it first emerged at the beginning of the year. At the time of this report, in July 2020, the pandemic is still "gathering pace"[10], and has spread out from Asia, across the world: it is truly global in its impact. Different countries, with differently configured health systems have then responded in different ways. Some have been very effective at managing the worst effects of COVID-19, others have failed.

In addition to the direct effect on population health, on nurses, other health workers, and health systems, there is also a variable and potentially long-lasting financial impact of COVID-19.

The World Bank has recently reported that "The COVID-19 pandemic has, with alarming speed, delivered a global economic shock of enormous magnitude, leading to steep recessions in many countries. The baseline forecast envisions a 5.2 percent contraction in global GDP in 2020—the deepest global recession in eight decades, despite unprecedented policy support. Per capita incomes in the vast majority of emerging market and developing economies (EMDEs) are expected to shrink this year, tipping many millions back into poverty. The global recession would be deeper if bringing the pandemic under control took longer than expected, or if financial stress triggered cascading defaults. The pandemic highlights the urgent need for health and economic policy action—including global cooperation—to cushion its consequences, protect vulnerable populations, and improve countries' capacity to prevent and cope with similar events in the future"[11].

In addition, OECD has reported a COVID-19 related average 7.5% decline in Gross Domestic Product (GDP) in 2020 across its high income member countries, with much bigger drops of approximately 11% of GDP in each of the four large European countries most affected by the pandemic- France, Italy, Spain and the UK (this analysis assumes no second wave)[12].

The more pronounced and longer lasting the pandemic in a country, the more likely that country will also experience major economic disruption, and long-term financial problems. This in turn will affect availability and future decisions on health funding, and on other core policy issues which will impact on nurse workforce supply: employment, education, and general migration policy. For example, policy decisions at country level on future allocation of funding to health and education systems will inevitably play a part in determining the future supply of nurses, while any changes in general migration policy could enable or constrain inflow of international nurses.

At this point in time, trying to assess the global impact of COVID-19 on nurse supply and mobility is to examine a fast-moving target against a varied and changing background, using data that always has a time lag. This brief does not attempt the impossible, to examine all these system impact variables in detail, but it does recognise that they will be significant in determining the future profile of the nursing workforce, and its patterns of mobility.

The brief is therefore a snapshot which focuses on a direct examination of nurse supply in this broader context of "COVID-19 and beyond", to highlight policy challenges and set out policy options. It does so by using data analysis, document review, media scans, and key informant interviews, with illustrative examples of country trends and experiences. It assesses the pre-COVID-19 patterns of nurse supply, and current situation, to set out the main future policy challenges related to nurse supply. The development work for the brief was conducted in May and June 2020.

These findings are synthesised into a policy option framework which is presented in the final section of the brief. This framework is intended to assist in shaping an assessment of policy options in any country.

The remainder of the brief is in three further sections:
Section 2 describes the recent profile of the global nursing workforce, and trends in supply;
Section 3 highlights the key impacts of COVID-19 on the nursing workforce;

Section 4 looks "beyond" COVID-19 to set out the major policy considerations required to ensure a sustainable supply of nurses.

2. PRE-COVID-19 PATTERNS OF NURSE SUPPLY AND MOBILITY

2.1 The profile of the global nursing workforce

- The global nursing workforce is estimated at 27.9 million nurses; nine out of every ten nurses worldwide is female.

- The global shortage of nurses is estimated at 5.9 million nurses.

- Nearly all (89%) of these shortages are concentrated in low- and lower middle-income countries.

- WHO Regions with the lowest density of nurses (African, Eastern Mediterranean and South-East Asian regions) also had the lowest graduation rates (7.7, 7.1 and 12.2 graduate nurses per 100,000 population, respectively).

- High income countries had more than three times the graduation rate (38.7 graduate nurses per 100,000 population) than low income countries (10.4).

- One out of six of the world's nurses are expected to retire in the next 10 years, meaning that 4.7 million new nurses will have to be educated and employed just to replace those who retire; higher rates will be evident in some high income countries.

- One in every eight nurses practises in a country other than the one where they were born or trained.

In order to better understand the impact of COVID-19 on nurse supply now and in the future, a baseline is needed. Fortunately, as noted in the introduction, the first ever global assessment of the nursing workforce was published in April this year. Using data mainly from 2018-19, the "State of the Worlds' Nursing" (SOWN)[13] report provides an immediate "pre-COVID-19" picture of the global profile of the nursing workforce.

The SOWN report, published by WHO in association with ICN and Nursing Now, draws from data on the nursing workforce in 191 countries. Headline figures are that the global nursing workforce is estimated at 27.9 million, of which 19.3 million (69%) are designated as "professional nurses", and 6.0 million (22%) are "associate professional nurses" (a further 9% were not classified).

SOWN highlights that nine out of every ten nurses worldwide are female. The Gender Equity Hub (GEH) established by WHO has highlighted recently that the female health and social care workforce, who deliver the majority of care in all settings, face barriers at work not faced by their male colleagues. This not only undermines their own well-being and livelihoods, it also constrains progress on gender equality and negatively impacts health systems and the delivery of quality care[14]. The Hub has stressed that "Policies to

date have attempted to fix women to fit into inequitable systems; now we need to fix the system and work environment to create decent work for women and close gender gaps in leadership and pay"[15]. This brief strongly supports the need for nurse workforce policies and policy implementation to take this overarching approach.

The SOWN report also highlights that the nursing workforce is unevenly distributed across the globe. Over 80% of the world's nurses are found in countries that account for half of the world's population. SOWN estimated the global shortage of nurses to be 5.9 million nurses in 2018, of which 89% was concentrated in low- and lower middle-income countries.

SOWN explores the "adequacy of the education pipeline" in different countries by examining nurse graduate output in comparison to population size. It noted that WHO Regions with the lowest density of nurses (African, Eastern Mediterranean and South-East Asia regions) also had the lowest graduation rates (7.7, 7.1 and 12.2 per 100 000 population, respectively), and that high income countries had more than three times the graduation rate (38.7 nurses per 100,000 population) as did low income countries (10.4), whilst adding the caveat that data was not available from all countries[16].

SOWN reports that 17% of nurses globally are aged 55 years or over – and therefore expected to retire within the next 10 years; 4.7 million new nurses will have to be educated and employed over the next decade just to replace those who retire[17]. One major feature of the nursing workforce in many high-income countries is a relatively old age profile. To keep pace with population growth and eliminate nursing workforce shortages, even more will be required.

SOWN also reports that one nurse out of every eight practises in a country other than the one where they were born or trained, and that these nurses are mainly found in high-income countries, with a share of 15.2%, compared to a share of less than 2% in countries of other income groups[18].

The SOWN report highlights that the international mobility of the nursing workforce is increasing. It notes that "Many high income countries in different regions appear to have an excessive reliance on international nursing mobility due to low numbers of graduate nurses or existing shortages", and makes a recommendation that "Countries that are over-reliant on migrant nurses should aim towards greater self-sufficiency by investing more in domestic production of nurses"[19]. The next section gives more attention to

this issue, within the context of the current COVID-19 pandemic.

2.2 "Self sufficiency" and international supply of nurses

- In the OECD countries examined in this report, the nurse graduation rate was four times higher in Australia (82 nurse graduates per 100,000 population) than in Italy (21); other countries reported to have relatively low graduation rates were Chile (24), Portugal (24), and the UK (27).
- 550,000 foreign trained nurses are working across the 36 high income OECD member countries (up from 460,000 in 2011). This includes 197,000 nurses in USA, 100,000 in the UK, 71,000 in Germany, and 53,000 in Australia.
- The level of reliance on foreign trained nurses in comparison to domestic trained nurses varies across OECD countries, being highest in New Zealand (26%); in countries of the Gulf it is as high as 97%.
- The annual trend in the level of inflow of nurses to some destination countries has varied markedly across time, highlighting a long-term approach to controlling inflow.
- There is a second international flow to consider - individuals who move to another country, specifically for their nurse training, often in the anticipation of staying on when qualified to practise.

Much of the focus of SOWN is on absolute shortages of nurses in many low- and middle- income countries, which are preventing the delivery of essential care packages for UHC. It highlights that international outflows of nurses can undermine the preparedness of some of these countries to meet healthcare demands. There is a risk that this could be exacerbated further during COVID-19, if existing deficits of nurses are worsened.

"Destination" countries are the driver

To understand the growing trend in international flows of nurses, it is necessary to understand what is happening in so called "destination" countries: those that are the destination point for many internationally mobile nurses. Nursing shortages in some high income countries, created when demand is outstripping supply, coupled with an ageing nursing workforce in many, and reduced domestic supply from training in some, has focused national policy attention in these countries on international recruitment as a "solution". The scale of the international flow of nurses

is large, and growing. OECD analysis highlights that more than 550,000 foreign trained nurses are working across 36 high income OECD member countries ; this is a marked increase on the 460,000 recorded in 2011[20]. The United States reports the highest number, with an estimate of almost 197,000 registered international nurses (RNs); second is the United Kingdom with over 100,000 foreign-trained nurses, then Germany with 71,000, and Australia with 53,000[21].

These countries are attracting nurses to be internationally mobile, to move in search of better earnings and career prospects, and to help fill the gap between increasing demand and lagging domestic supply of nurses.

The size of the gap can be significant. For example, the NHS in England (UK) reports approximately 40,000 registered nurse vacancies[22] and the Federal Labour Agency in Germany (Bundesagentur für Arbeit) reports that the average number of vacant positions for registered nurses in long term care in 2019 was 15,000 and in acute care 12,400; furthermore they highlighted that it took 205 days to fill a position for a nurse in long-term care and 174 days for a nurse in a hospital[23]. Funded vacancies is one indicator, but may be an underestimate of actual gaps in supply.

Graduation rates

Long term reliance on inward international inflow of nurses is the antithesis of "self-sufficiency", and can be a marker of a country that is not investing sufficient funding and effort in training adequate numbers of nurses to meet its own demands. Self- sufficiency requires a graduation rate of new nurses entering the workforce from domestic training that can meet longer term demand, in combination with retention of current staff.

In the previous section it was noted that SOWN had reported that on average, high income countries had more than three times the graduation rate, of 38.7 nurses per 100,000 population, as did low income countries (10.4)[24]. However there is huge variation in the graduation rate across high income countries, as highlighted in Figure 1, which shows the number of nurses graduating per 100,000 population in selected countries of the OECD.

Figure 1: Selected OECD countries, nurse graduations per 100,000 population, most recent year
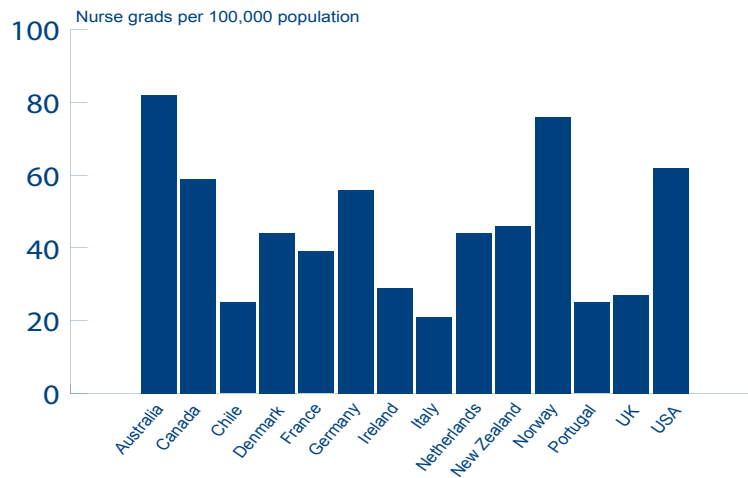
Source: OECD 2019[25]
Note: OECD reports that Denmark, the United Kingdom and the United States data are based on the number of new nurses receiving an authorisation to practice; this may result in an over-estimation if these include foreign-trained nurses.

The average graduation rate across OECD countries was reported as 44 nurse graduates per 100,000 population. In the selected countries shown in Figure 1, the nurse graduation rate was four times higher in Australia (82 per 100,000) than in Italy (21); other countries reported to have relatively low graduation rates were Chile (24),Portugal (24) ,and the UK (27)[26]. This highlights a huge variation in the actual and relative size of new supply of nurses from domestic training across the high- income countries of the OECD.

Measuring the self sufficiency of nurse supply

ICN has an established track record in assessing and advocating that countries must focus on self sufficiency as an integral element in overall nurse workforce planning[27]. A loose measure of country "self sufficiency" in nurses can be determined by assessing the percentage of the total nursing workforce in a country that was foreign trained- the higher the percentage, the less the country is self sufficient. This self-sufficiency indicator varies markedly across OECD countries, (see Figure 2 below), but can be as high as 26% (New Zealand).

Figure 2: Selected OECD countries, % foreign trained nurses
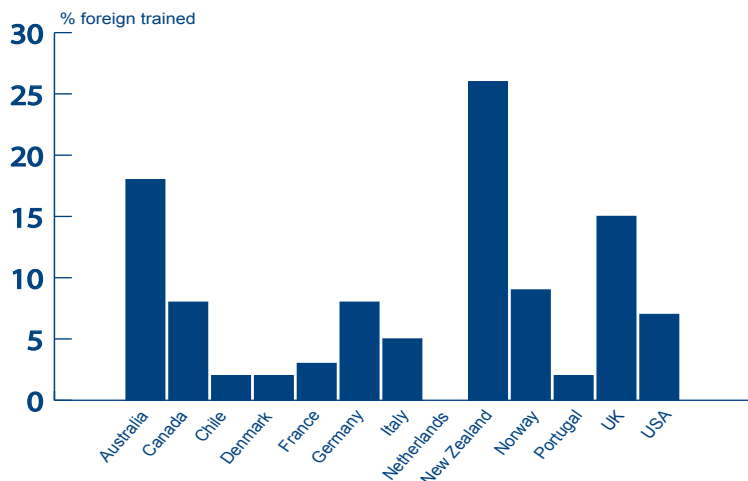
Source: OECD 2020[28]

Note: Data for Ireland not available

Many other countries are also heavily reliant on international nurses. SOWN reports very high levels of reliance on foreign trained nurses, notably in some small countries that do not have sufficient training capacity (e.g. Maldives, Monaco) , but also in some high income countries in the Gulf and Arabian peninsula - for example 77% in Saudi Arabia, and 97% in Qatar[29].

Generally speaking, long term reliance on international inflow of nurses is a feature of countries that can attract international nurses because they have "pull" factors such as relatively higher wages, and better career and educational opportunities. This entitled "destination" country status allows them to limit their own investment in education nurses, if they chose, meaning that another ("source") country, or the nurses themselves have paid the training costs. It also enables them to increase and decrease international inflow over time, by using regulation, migration policy and targeted active international recruitment.

This means that the extent to which a country nears "self- sufficiency" in nurses can also vary markedly over time. At country level, to develop a full perspective of the relative importance of domestic and international sources of nurse supply, and likely future trends, it is therefore also essential to track trends over time.

Figure 3 below provides an example, from the UK, over the period since 1990. On an annual basis, the level of reliance on international sources as a percentage of total new "supply" of nurses as measured by the number of new nurse registrants has been as low as 11% (in 1993/4 and in 2008/9) and as high as 53%. (2001/2). The recent trend shows an upward level of international inflow, reflecting domestic nursing shortages.

Figure 3. United Kingdom: International nurse supply (Int) in comparison to new supply from training (UK); annual %, 1990-2019
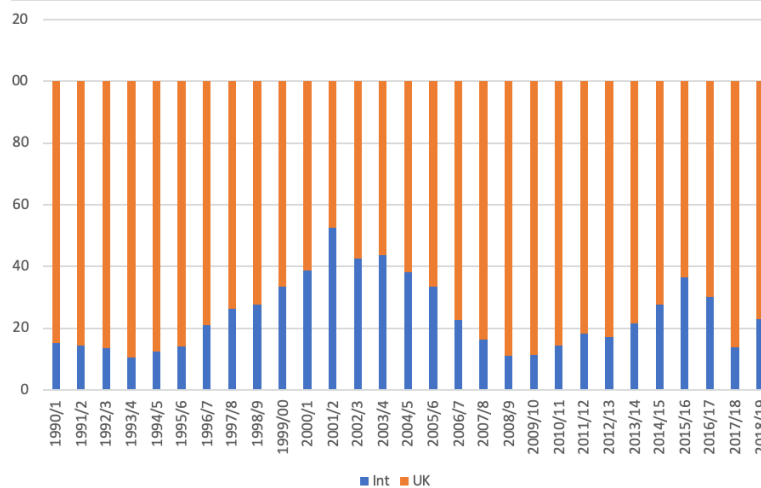
Another example is Oman, which has explicitly followed a goal of "Omanisation" of its nursing workforce, by progressively replacing expatriate nurses with similarly qualified local nurses "to develop a sustainable workforce and achieve self reliance"[30].

Measuring and tracking nurse workforce self sufficiency at national level takes on even greater importance when WHO member states endorsement of the WHO Global strategy on human resources for health is taken into consideration. Milestone 2.1 of the strategy is that "By 2030, all countries will have made progress towards halving their dependency on foreign-trained health professionals, implementing the WHO Global Code of Practice on the International Recruitment of Health Personnel"[31]. To meet this commitment, countries must be able to monitor their level of self sufficiency, and track its progress against an agreed metric.

Foreign born student nurses

In order to have a complete picture of the extent to which a country is reliant on international flow, it is also essential to assess a second type of source- that of foreign born student nurses who move to a country for nurse training, often in anticipation of staying on in this destination country of training after qualification[32]. This second flow can exacerbate the imbalance between "source" countries, which tend to be low and middle income, and have limited resources and capacity to educate and employ their own nurses, and higher income destinations.

Data from Australia provides an illustration of this second route for "international inflow" (Fig 4). Since 2012 there has been a growth in Australian citizen completing their nurse training and being eligible to register initially, but also a continued inflow of student nurses on "temporary visa permits", who have travelled to Australia specifically for their training. This second international inflow represents about one in five domestically trained students who annually complete their training for initial registration to practice.

Figure 4: Australia: Number of completions for initial registration as a nurse by citizenship, 2012-2018
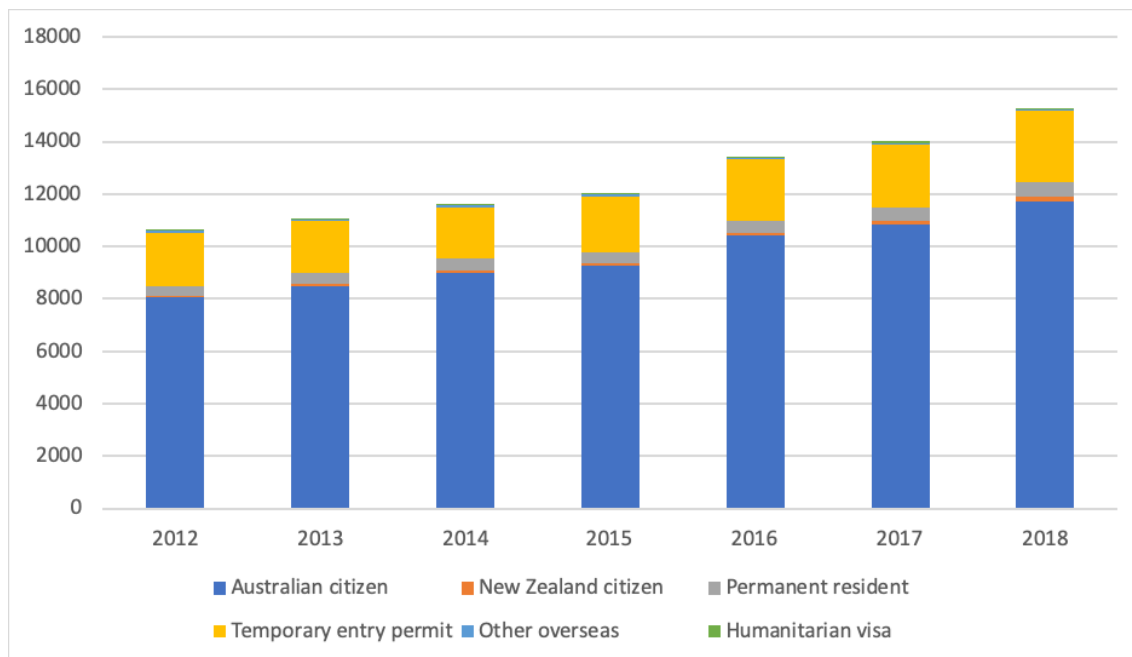
Source: ANMF/Selected Higher Education Statistics, Australian Government Department of Education and Training

This section has set out the key features of the global nursing workforce as COVID-19 began to impact across the globe. It highlights continued shortages in many countries, huge variation in destination country levels of domestic training of nurses, marked differences in the extent to which high income countries are "self sufficient" in nurses, and an overall increase in the international supply of nurses to high income countries.

2.3 Supply trends in source countries

- OECD reports that the highest emigration rates for native-born nurses exceeds 50%, in 20 countries, mainly small island states in the Caribbean and in the Pacific, and some countries in Africa.

- OECD also reports there are almost 240,000 Philippine born nurses working in OECD countries, and almost 90,000 Indian born nurses.

- Outflow of nurses from the Philippines has been around 15,000 to 20,000 per annum in recent years, but the annual number of nurses who have passed the national licensing exam has dropped significantly, from about 45,000 in 2012, to less than 10,000 in 2018.

- In India there were only 30 colleges training to B.Sc Nursing level in 2000; this had grown to 1,326 by 2010, and 1,968 by 2019

- There were almost 100,000 BSc nursing seats available in colleges of nursing in India in 2019, and more than 90%, about 91,000, were in private sector nursing schools.

The previous section highlighted that there has been growth in inflow of nurses to the high- income countries of the OECD, with more than 550,000 foreign trained nurses reported in OECD countries. The level of reliance on foreign trained nurses in comparison to domestic trained nurses varies across OECD countries, reportedly being highest in New Zealand (26%); in other high income, but non-OECD countries, such as in the Gulf, SOWN reports this can be as high as 97%.

The impact on source countries

The impact of this level of outflow on "source" countries is difficult to assess in detail. Data on annual trends in outward mobility is not available from all countries. OECD cautions that data is incomplete for some countries, but estimates that around a third all foreign-born or foreign-trained doctors or nurses working in OECD countries originate from within the OECD area , and that another third are from non-OECD upper middle-income countries. The lower-middle-income countries account for around 30% and low-income countries for 3 to 6% of migrant doctors or nurses[33].

An emigration rate can be calculated, by estimating the percentage of nurses born or trained in a country, but working abroad, compared to the total who remain working in the country. The higher the emigration rate, the more the nursing workforce of the country has been depleted by international outflows.

OECD reports that the highest emigration rates for native-born nurses exceed 50% in 20 out of 188 countries. These countries are mainly small island states in the Caribbean (e.g. Grenada, St Lucia, Trinidad and Tobago, Jamaica) and in the Pacific (e.g. Tonga, Fiji) and countries in Africa, some of which are post conflict states (e.g. Liberia and Somalia)[34]. These countries tend to have very small numbers of nurses in the workforce, and their domestic training capacity is extremely limited. This makes them particularly vulnerable to outflow: even out-migration of a relatively

small number of nurses can undermine their workforce capacity.

Two major source countries: The Philippines and India

However a different picture emerges when examining the two countries which stand out as being the major sources of international nurses working in OECD countries. OECD reports there are almost 240,000 Philippine born nurses working in OECD countries, and almost 90,000 Indian born nurses[35]. Whist the emigration rates for these two countries are lower than 50%, reflecting the huge potential size of their domestic nursing population, they are the major source countries for the high-income OECD destinations.

A brief examination of recent trends in the Philippines and India highlights a dynamic situation, which reflects changing levels of international demand for nurses against a rising overall trend, and repercussions for domestic nursing labour markets.

The Philippines is a lower middle income country, with a population of over 100 million, which employs only about 90,000 nurses, split between public and private sector employment[36] giving it a relatively low nurse/population ratio; pay for nurses is low, and the country has nurse vacancies. A recent review characterised the situation: "There has been a significant maldistribution and shortage of nursing staff, particularly in the rural areas brought about by this significant and unmanageable migration of nurses thereby causing tension between the demand for them in the global and local market"[37].

The Philippines is often described as having a "train for export" model of nurse education[38 39], facilitated by a government agency, the Philippine Overseas Employment Administration (POEA). The intention is to enable Philippine nurses to move and work abroad, where pay and career opportunities are much more attractive, and for them to then remit part of their foreign currency earnings back to family. Most schools of nursing in the Philippines are in the private sector, and the nursing students will be paying for their education, often with the express intention of moving abroad to practice when they graduate.

The "train for export" model led to rapid expansion in the number of private sector nursing schools, meeting international demand for Philippine trained nurses, initially in the United States, but in more recent decades also to a range of other countries in the

Middle East and Gulf (e.g. Saudi Arabia), Europe (e.g. the UK and Ireland) and Asia/Australasia (Singapore, New Zealand, Australia). The United States alone is reported to be the home for almost 150,000 Filipino nurses[40].

This expansion, and outflow of nurses, was curtailed for a period after the global financial crisis of 2008, when there was a reduction in international demand for Philippine trained nurses, leading to increased nurse unemployment in the country. In 2012 it was estimated there were 200,000 registered Philippine nurses who could not find work, and an estimated additional 80,000 graduating that year into an already saturated job market[41].

The result has been that many Philippine nurses are out of work, or have employment in other sectors "due to a scarcity of jobs and poor pay"[42]. This has been termed a "migration trap": "Pursing higher education as a means to migrate also puts Filipino students at risk of getting caught in a migration trap, where prospective migrants obtain credentials for overseas work yet cannot leave when labor demands or immigration policies change"[43].

In addition to a drop in demand from high income countries, there was also concern that the rapid expansion in private sector nursing schools, driven by the train for export model, had led to a reduction in the quality of education provision in some nursing colleges[44 45]. Some Philippine nursing programmes have been closed down by the Commission on Higher Education (CHEd) for failing to meet quality standards: "The regard for Filipino nurses abroad has gone down after many schools took advantage of the demand for nurses abroad by offering poor and ill-equipped nursing programs"[46]. For example, in 2013 it was reported that a total of 83 schools, colleges and universities would no longer be allowed to offer nursing programmes, after they were ordered closed for failure to comply with the standards set by CHEd[47].

The outcome of over-expansion of domestic training capacity in comparison to varying international demand and low domestic demand is that the annual number of new nurses graduating from Philippine colleges of nursing has dropped in recent years. Outflow of nurses deployed from the Philippines to other countries has been around 15,000 to 20,000 per annum in recent years, but the annual number of nurses who have passed the national licensing exam has dropped significantly in recent years, from about 45,000 in 2012, to less than 10,000 in 2018 (Figure 5).

Figure 5: Philippines: number of nurses passing licensing exam, 2012-18; number of nurses deployed abroad, 2012-2016
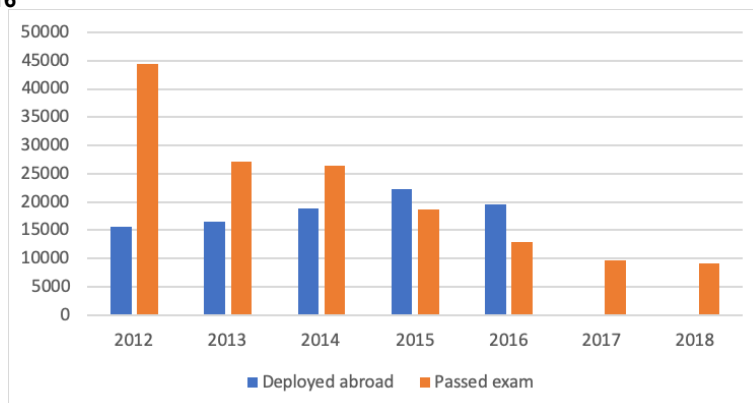

Sources: [48]

The Philippines provides a cautionary note. If a nurse education system is developed mainly for the "export" market, and driven by rapid proliferation in private sector nursing schools, this can lead to over-expansion of training output, risks lowering standards, and may result in nurse unemployment if the domestic health system is not funded to expand its nursing workforce, and not able improve poor working conditions and unattractive remuneration.

The other main source country for international nurses is India. Rapid growth in the education sector has led to a marked increase in output of nurses from domestic training. This growth has been particularly notable for nursing colleges that train to BSc level, which is the qualification most useful for international work. There were only 30 colleges offering the BSc in nursing in 2000; this had grown to 1326 by 2010, and 1968 by 2019 (See Figure 6).

Figure 6: India: Growth of B.Sc nursing colleges, India: 2000, 2005, 2010, 2015-19
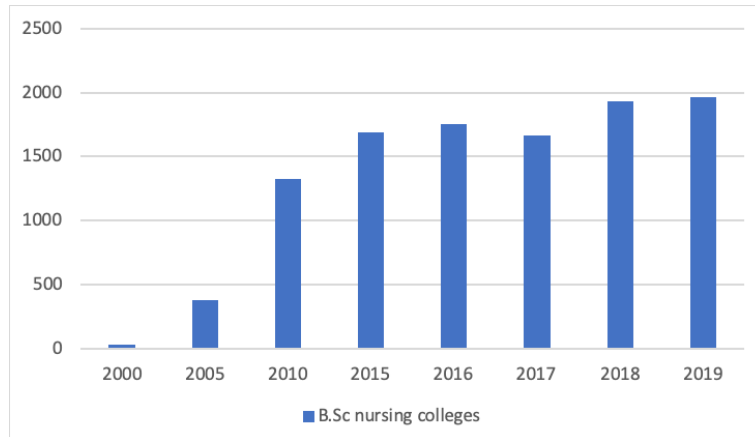
Source: Indian Nursing Council annual report

The attraction of better pay and career prospects while working as a nurse in high income countries is the driver for many Indian nationals to train as a nurse, just as is the case in the Philippines. In addition, training in the English language eases the migration routes to many of the main OECD destination countries.

In India, as in the Philippines, most of the expansion in training capacity to meet increased demand for a nursing qualification as a "passport" to migrate has been in the private sector, with the nurses paying for their training. Latest data, from 2019, highlights that of the almost 100,000 BSc nursing seats available in colleges of nursing in India, more than 90% (about

91,000) were in private sector nursing schools (Fig 7). The data also shows the geographic concentration of nursing colleges in a relatively small number of States, notably Karnataka, Kerala, Madhya Pradesh, Rajasthan and Tamil Nadu.

A 2017 detailed study in one of these States, Kerala[49], reported that about 20,000 Kerala registered nurses were working internationally. More than half (57%) of these emigrant nurses were in Gulf countries; other destination countries were the USA (6%), Canada (5.5%), and a smaller share in Australia, Germany, Ireland, Italy, Maldives and Singapore (2% to 3%). Many others had migrated internally within India.

Figure 7: India: Number of B.Sc nursing seats, government and private sector, by State 2019
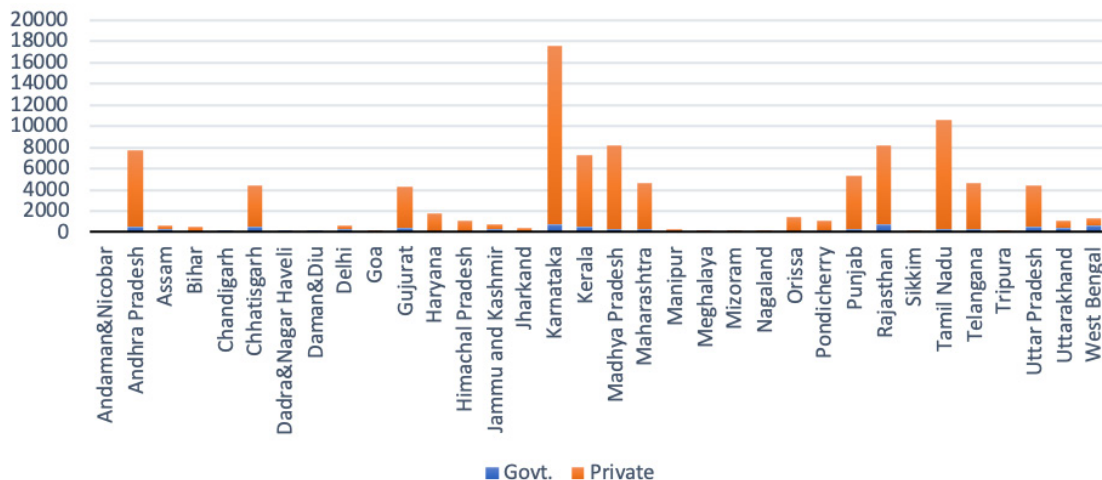
Source: Indian Nursing Council annual report

This brief review of pre-COVID-19 nurse supply issues in so called "source" countries has reinforced the point that there has been a long term trend of high emigration rates from some low and middle income countries, which challenges their ability to meet United Nations Sustainable Development Goal targets and achieve UHC. Smaller countries in the Caribbean and the Pacific, and post-conflict countries in Africa, have amongst the highest emigration rates with more than half their nurses working in high income OECD countries. There has also been continued, if variable outflow from the two largest source countries of the Philippines and India. In the next section, the impact of COVID-19 on the global nursing workforce will be briefly described, in order to then give consideration to future patterns of supply.

3. COVID-19 IMPACTS ON THE NURSING WORKFORCE

Three phases of impact

As noted in the introductions, COVID-19 has impacted very differently in different countries, in part because of different levels of resource availability and system preparedness, and different models of system response. The impact on the nursing workforce has also been variable, but there are a core group of factors which have been reported in most countries covered by this brief. These are highlighted in this section. It is not the intention to describe in detail the specific features of policies implemented in any one country, or to report on the effectiveness of measures that have been implemented. This is a summary snapshot.

Table 1 draws from information provided by informants, from a media scan, and from the limited number of policy reviews that have so far been published[50] [51]. For the purposes of this brief, it summarises the main nurse workforce issues related to three different phases of COVID-19 impact and policy response, based on a composite of input from national nursing associations (NNAs) and other informants; the brief identifies key nurse workforce policy issues at each phase (key points are summarised below, see Table 1).

Phase 1: First wave of COVID-19 impact

The initial phase of preparing for and meeting the first wave impact has normally been by developing "surge capacity". This has involved rapid scaling up of critical care/ intensive care (CCU/ICU) capacity, in some countries accompanied by reduction or suspension of other elements of acute care provision. A separate but linked issue in some countries has been the impact of COVID-19 on nursing and care homes, which have often been less well supported during the initial phase that has tended to prioritise acute sector surge capacity. It should be noted that in some countries some changes have been attempted without the agreement of NNAs, by the use of emergency laws or suspension of normal agreements.

Nurse workforce supply responses for this first phase have focused primarily on increasing overall nurse workforce capacity, and shifting more of that capacity to ICU/CCU. Reports from all counties have highlighted that it is nurses who have provided the critical "front line" staff capacity in CCU/ICU, which has enabled health systems and countries to try and meet the intensive care challenges of patients with acute COVID-19 symptoms in this first phase. This has included requiring nurses to work longer hours and/or different shift patterns; redeploying nursing staff from other clinical areas, sometimes with additional training, to CCU/ICU; bringing non practising nurses back into the workforce as temporary/voluntary "returners"; deploying student nurses to "front line" work; using temporary/agency staff; "fast track" integration of international nurses already in the country but awaiting final licensure/registration; and integration of refugees with nursing qualifications[52]. In some countries there has been a switch to more technology-based remote contact and tele-health. There have also been reports of international recruiters direct advertising to try and recruit scarce healthcare staff from low- and lower middle-income countries in Africa, Asia and the Caribbean[53]. Some countries have provided financial incentives, such as "one-off" payments, to encourage staff to remain in high demand COVID-19 areas, or to recognise their contribution[54].

One other policy response, in a few countries, has been to try and prevent nurses from moving to another country. Country level general "lockdowns" and travel bans will often have had this effect in any case, but some countries have gone further. This was most notable in the Philippines, where the Philippine Overseas Employment Administration issued a resolution on April 2 halting the international departure of workers in 14 health professions, including nursing, for the duration of the nation's COVID-19 related state of emergency[55]. After complaints, this ban was partially relaxed a few days later, when health workers with existing overseas contract, signed by March 8, were allowed to leave, if there was transport available. However future applications for healthcare jobs abroad were "frozen until further notice"[56].

This temporary disruption to international supply has already impacted on some destination countries. For example, in mid May 2020 it was reported that UK government's plan to significantly boost the NHS nursing workforce in England "has been hit by a significant fall in international recruitment caused by the coronavirus pandemic"[57].

Three main underlying issues have been a concern for many NNAs. One is maintaining safe minimum staffing standards when nurses are absent because of COVID-19 symptoms (acute, primary care and care home sectors), and trying to ensure staff and patient safety during the redeployment of staff, who may be moved to work in unfamiliar areas, sometimes without adequate preparation and training.

A second issue highlighted by informants was the need to provide equitable treatment to "returners" and temporary contract staff; a third, reported in all countries, and across acute, primary care and care home sectors, has been inadequacies in the provision of safe and appropriate personal protective equipment (PPE). The media coverage of nursing in many countries has been generally very positive, focusing

on their "front line" role, but many countries have also seen examples of inadequate access to PPE, stigma against nurses as possible vectors for infection, and violence against nurses, as highlighted by ICN.

Phase 2: Transition phase

This second phase covers the period beyond the first immediate phase of impact of COVID-19, when systems have to maintain the capacity to meet any future pandemic waves, whilst also beginning to redeploy resources back to other parts of the health system to enable them to function more effectively, often including dealing with a backlog of cases, and to begin to meet increases in demand caused by patients who have survived COVID-19 but have now developed longer term conditions.

In terms of supply of nurses, this can include moving nurses from temporary working in ICU/CCU back to their normal clinical areas (in some cases this will include maintaining flexibility to shift them back if there is a second wave); reducing or ending the deployment of volunteer "returner" nurses (also in some cases retaining them on a reserve "pool" that can be rapidly redeployed if there are other waves); transitioning student nurses back to their learning role so that they can finish their disrupted studies; and planning and providing staff cover to allow time off work or in less stressful work areas for front line staff that have burned out, or are in ill health as a result of their intensive workload in the initial phase of COVID-19.

Critical policy issues that all health systems are and will have to address are the provision of adequate and long-term counselling and support for stressed staff[58]. It is clear that many will suffer from physical and mental illness as a result of their experiences. A separate but related issue highlighted by some NNAs is that systems and countries must provide equitable and effective long term absence policies, and early retirement policies, for nursing staff who develop long term effects after working in COVID-19 response.

Phase 3: The "New Normal"

As health systems transition beyond the immediate COVID-19 aftermath, there are likely to be major changes in configuration and priorities in health service delivery, in some countries at least. At this point it is not possible to be certain when this phase will occur in any specific country, but it will be shaped by likely changes in funding availability, which will be constrained in the many countries that have experienced significant economic damage as a result of the impact of COVID-19. The pressure for change

will also reflect a need to meet new and changing healthcare demands, whilst maintaining the ability to respond effectively to future pandemics.

Firstly, there will be a need to improve established CCU/ICU capacity in some countries, where the initial impact of COVID-19 exposed inadequacies in resources and organisation. Secondly, many COVID-19 patients will develop long-term and chronic conditions, which will require long-term care responses. Third, many countries will also have to look to improve public health and primary care provision, and achieve better integration with the acute/hospital sector to try and improve overall system responsiveness to future waves of COVID-19 or other pandemics.

The healthcare sector is labour intensive, and system change can only be achieved with workforce support. Key nurse supply policy issues for consideration in this longer time scale will include responding to the need to have expanded CCU/ICU capacity by training more nurses to specialise in ICU/CCU; an overall focus on improving the retention of nurses as part of the response to keeping skilled staff in the health system; retraining of some nurses so that they can provide increased staffing capacity in relatively high demand areas for care provision and to "buy time" for increased supply of new nurses to come from training; increasing supply of new nursing staff from domestic education, including those with public health and primary care skills; and developing or increasing the supply of clinical specialist nurses and those working in advanced practice roles and as nurse practitioners, to provide more effective staff mix.

It was noted earlier in this brief that many countries were experiencing shortages of nurses before COVID-19. The impact of COVID-19 has further exposed these existing staffing gaps. As a country moves from "transition" to "new normal" it is also likely that the impact of COVID-19 will reduce the supply of nurses over a period of months, at least, because some staff will have burned out, and will be absent for a short or long-term period. Others will reduce their working hours.

Unless countries give serious consideration to maintaining the attractiveness of nursing as a career by the provision of fair pay and conditions of employment, and career prospects, the mid- to long-term supply of new nurses may be compromised. The second major issue is to review if the capacity of the domestic education system, in terms of the projected size and skill profile of future student nurse cohorts, will be sufficient to sustain nurse supply. This requires the ability to assess nurse labour market dynamics, and to undertake workforce projections.

**Table 1: Three phases of COVID-19 response: A snapshot composite of nurse workforce issues
(These phases will occur at different times in different countries; and not all responses have been applied in each country)**

	Main health system challenges	Key reported nurse work-force supply responses	Related workforce policy issues
First wave of COVID-19	Developing surge capacity Focus on acute intensive care/ critical care Maintaining provision in primary care/ care homes	Extra hours worked/ different work patterns Re-deployment of current staff Integration of returners Student nurses in workforce Fast track integration of interna-tional nurses Integration of refugees with nursing qualifications [Prevention of international out-flow of nurses] [Disruption of international in-flow] [Active international recruitment] [financial incentives]	NNA involvement and agreement in changes Maintaining safe minimum staffing standards when staff are absent because of COVID-19 symptoms Staff and patient safety during redeployment Equity for returners and temporary contract staff Adequacy of PPE
Transition phase	System preparedness for additional waves Managing "two track services"- COVID-19/non COVID-19	Return or flexible deployment of long-term nursing staff Reduce/end use of short term/volunteer returner nurses Return of nursing students to education Cover and relief for burn-out/staff with ill health	Adequacy of counselling and support etc for stressed staff Equitable long term absence and early retirement policies
"New normal"	System preparedness for additional waves: improve longer term CCU/ICU capacity Growth in COVID-19 related chronic care- need for improvements in pri-mary care/ public health	Train more nurses to specialise in ICU/CCU Retention of current nurses Retraining of some nurses Increase supply of new nursing staff, including those with public health and primary care skills Increase supply of clinical specialist nurses/ advanced practice	Attractiveness of nursing as a career: Pay and conditions of employment, and career prospects Domestic supply: training capacity and constraints

Sources: key information provided by NNAs in Australia, Canada, Germany, India, Ireland and the Philippines. Additional sources: [59] [60] [61]

This section has summarised the key nurse workforce supply implications of COVID-19. It is a synthesis, in a rapidly changing situation, and with different country experiences. Its aim is provide a composite of key nurse workforce policy issues for consideration in any country as it moves from initial impact of COVID-19, into transition and beyond.

The primary purpose of this brief was to give a snapshot assessment of how the COVID-19 pandemic is impacting on the global nursing workforce, with a specific focus on how patterns of nurse supply and mobility may change "after" COVID-19. The final section of the brief will consider how patterns of nurse supply and mobility may change over the next few years.

4. COVID-19 AND BEYOND: HOW WILL IT CHANGE NURSE SUPPLY AND MOBILITY?

4.1 Health system funding and "known unknowns".

How will COVID-19 impact on global nurse supply? To examine what may happen, it is necessary first to remind ourselves of the immediate pre-COVID-19 trends in supply (section 2 of this brief), and then factor in what we know about the impact on the nursing workforce during country level responses (section 3 of this brief). This provides sufficient information to sketch out the likely main alternative future patterns of nurse supply.

One critical determinant of future supply of nurses, already discussed, is the huge damage that COVID-19 has already exerted on some country healthcare systems and economies, and which will impact on the workforce if the financial costs of COVID-19 on the economy translate into policy decisions to restrict future funding of healthcare. One extreme example is the United States, where healthcare spending has already fallen by 18% in the first three months of 2020, and 1.4 million healthcare workers lost their jobs between March and April 2020[62]. Healthcare is labour intensive, and future funding decisions will enable or constrain levels of nurse supply, by impacting on workforce numbers and career opportunities.

Four external factors will play a role in determining patterns of nurse supply, but are currently "known unknowns"- we understand that these factors may have a significant if differential impact in different countries, but we cannot quantify the effect in any one country.

Firstly, there are variable and often stringent travel restrictions in place at national borders, which mean that internationally mobile nurses may not be able to move to chosen destinations, even if they wish to. Over the next few months at least, patterns of travel will be shaped by the extent to which different countries maintain COVID-19 related border controls, or reduce/end them.

Second, there may be a change in internationally mobile nurses perceptions of the relative attractiveness (safety?) of different destination countries, shaped by how effectively these countries responded to COVID-19, how well funded and robust their post COVID-19 healthcare system is, and how attractive they are as a place to pursue a nursing career. For example, as highlighted in section 2, the two largest OECD destination countries for nurses, pre- COVID-19 were the United States and the United Kingdom. These are also two of the countries worst effected by COVID-19, in terms of mortality numbers, health system shock, and, in the case of the UK, in broader financial impact.

For example, both Philippine and UK media have reported that the Philippine ambassador in the UK had expressed concern over the COVID-19 related deaths of Philippine nurses in the UK, and called for adequate PPE[63]. A recent report from Public Health England (PHE) has highlighted that a total of 10,841 COVID-19 cases were identified in nurses, midwives and nursing associates registered with the Nursing and Midwifery Council in the UK, and that the proportion of infections in the nursing workforce was highest among Asian ethnic groups (3.9%). In addition, an analysis of 119 deaths of NHS staff showed a "disproportionately high number" of black, Asian and minority ethnic (BAME) people among those who died[64].

There has also been a report that some Filipino nurses working in the UK "fear repercussions for their visa status if they refuse any work during the coronavirus outbreak"[65]. More generally, the Philippine Nurses Association has raised concerns about the reported infection and mortality rates of Filipino nurses in the UK[66]. Similar concerns have been raised about the mortality rate of Filipino healthcare workers in the United States[67].

Does this negative media coverage mean that some countries may become relatively less attractive destinations, while others that did not experience the same level of COVID-19 damage on systems and funding, such as New Zealand, Australia and Germany, become potentially more attractive?

A third policy issue that will impact on international supply of nurses will be the extent to which general migration policies at country level may change. The "self-sufficiency" debate has become more pronounced, covering immigration, but also other issues such as the manufacture of PPE and other healthcare equipment, and food supply chains. The result, in some countries, may be a new localism, with tougher general immigration policies[68] which may have the unintended consequence of limited international inflow of nurses.

Fourth is the critical question of if, and when, an effective vaccine is developed that can halt the pandemic and reduce the likelihood of future waves. The timing of any such development would have a major bearing on determining the future demand for different types of health services and for supply and deployment of nursing staff.

Whilst acknowledging these "known unknowns", it is possible to set out some of the main factors that will determine post COVID-19 levels of international supply of nurses, in terms of those that may increase international supply, and those that may decrease international supply. Table 2 provides a summary.

4.2 Factors that could increase the international supply and mobility of nurses.

Demand for international nurses from the usual **destination countries** is likely to continue if pre COVID-19 nursing shortages persist. In many destination countries COVID-19 has led to increased short term supply of domestic nurses, as returners come back into employment, and student nurses are co-opted into work. However, these emergency measures cannot be sustained in the long term and may actually mask a reduced supply of longer term/permanent staff if COVID-19 impacts on nurse

workload and burnout to reduce the retention rates or working hours. In this scenario, reduced domestic supply of nurses, combined with pre-existing shortages points to increases in active international recruitment of nurses.

In many **source countries**, there is "pent up" supply of nurses already planning to leave. These nurses may already have all the necessary paperwork to

move to a specific destination country, but the move has been prevented by travel restrictions. Assuming this pent-up supply is enabled, there will be a short-term spike in international outflow. Longer term, if pre COVID-19 patterns of low nurse staffing ratios and poor employment opportunities and retention persist in a source country, this is likely to lead to continued outflow of nurses.

4.3 Factors that could decrease the international supply and mobility of nurses

In **destination countries**, one post COVID policy focus could be on improving retention of nurses already in the workforce. This would reduce the need to rely on international inflow, and could contribute to self sufficiency. However, it assumes that retention improvements can be made in a workforce which may already be exhibiting a high level of burnout , absence, reduced working hours or early retirement after the impact of COVID-19. The ageing profile of nurses in some OECD countries has also to be taken into account, which will lead to higher retirement rates, regardless of the impact of COVID-19.

A second potential result of the impact of COVID-19 is that **destination countries** could recognise their vulnerability to long-term reliance on international inflow of nurses, which has been highlighted in short-term disruption of international supply, and begin to scale up their own domestic training capacity to shift towards so called "self sufficiency". This presupposes that there are resources allocated to increase training capacity, and that the time lag of at least four years between investment in training and return, in terms of more newly trained nurses coming into the workforce is acceptable to policy makers.

This may be difficult in countries where COVID-19 has exerted a significant financial toll. It also assumes sufficient interest from domestic applicants - there have been suggestions in some countries that the very positive media image of nursing in COVID-19 has raised the profile of the profession and could lead to an increase in applicants. The converse is that media coverage in many countries has also highlighted poor provision of PPE for nursing staff, intense workload, and heightened risks of burnout, illness and death.

One method of scaling up **domestic training** is to attract foreign nationals to enter domestic training establishments- so this "second flow" could reduce,

continue or increase, depending on immigration policy, levels of applications to nurse training from domestic candidates, and education funding models (in some countries, foreign students are attractive to educators because they pay a premium for their tuition).

In some **source countries**, with low nurse-to-population ratios, one result of the impact of COVID-19 may be a realisation that there is a need to increase nursing numbers, given the central role that available nurses will have played in dealing with COVID-19. This could lead to greater emphasis on retention of domestically trained nurses. This assumes that countries make policy decisions to improve retention through improvements in pay, working conditions and career prospects.

A second method of expanding the nursing workforce in **source countries** would be to have greater policy emphasis, funding and capacity to increase domestic training capacity. However without effective retention, and perhaps some form of policy based "return of service" requirement for nurses trained in the public sector, the risk is that any expansion of public sector training could then just lead to increased international outflow. Expansion of nurse training capacity in the private sector, such as has been seen in India and the Philippines, is only likely to occur where there is a clear financial return for individuals who pay for their own nurse training, either by improved domestic earnings and career prospects, or by international mobility to higher income countries.

These different factors determining post COVID-19 levels of nurse supply are summarised in Table 2 below. Some would act to increase pressure on international supply, others would act to constrain supply levels.

Table 2: Factors determining likely post COVID-19 levels of international supply of nurses to destination countries/ from source countries

	International supply of nurses increases	International supply of nurses is constrained
Destination countries	Pre COVID-19 shortages persist, and/or poor retention of nurses during and after COVID-19, leads to increases in active international recruitment of nurses	Greater emphasis on retention of domestically trained nurses Greater policy emphasis, funding and capacity to increase domestic training capacity: "self sufficiency"*.
Source countries	"Pent up" supply of nurses already planning to leave is enabled, leads to short-term spike in international outflow. Pre COVID-19 patterns of low nurse staffing ratios persist: may be increased by poor retention of nurses during and after COVID-19, leads to increases in outflow of nurses	Expand workforce: Greater emphasis on retention of domestically trained nurses Expand workforce: Greater policy emphasis, funding and capacity to increase domestic training capacity: "self sufficiency".
Health system funding levels	Health system funding constraints	Health system funding is maintained/increased
"Known unknowns"	Travel restrictions reduce/end? Perception that destination country is safe? General migration policy is enabling? Vaccine?	Travel restrictions remain in place? Perception that destination country is relatively unsafe? General migration policy is constraining? Vaccine?

Source: the author

Which of these factors prevails in each country, and the net global effect of these countervailing pressures will depend on the policy decisions made within countries, as well as on the policy influencing role of international organisations. These points are considered in the final section of the brief.

4.4 Policy actions for effective post COVID-19 international supply of nurses

COVID-19 has exposed the vulnerabilities of nurse supply flows, domestically and internationally. Its impact at country level has been to highlight further any existing supply gaps and the effect of staffing shortages. Internationally, its short-term impact has been to disrupt international supply, as borders close, travel is interrupted, and some countries restrict outflow.

SOWN had reported a shortfall of almost six million nurses immediately prior to the COVID-19 pandemic. As countries transition to a "new normal", beyond the immediate impact of the current pandemic they will have several policy options when it comes to addressing nurse supply. As discussed in the previous section, the net aggregate effect of these decisions (or decisions not taken) at country and global level cannot be defined in detail. However the examination of pre-COVID-19 patterns of international supply (section 2) gives a clear picture of what will happen if there are no significant policy changes: if the "new normal" for international supply of nurses is in fact the old normal, with a six million global shortfall and unequal distribution of nurses.

SOWN also highlighted that nine out of every ten nurses worldwide are female. WHO has highlighted recently that the female health and social care workforce, who deliver the majority of care in all settings, face barriers at work not faced by their male colleagues[69]. This brief strongly supports the need for nurse workforce policies and policy implementation to have an overarching objective of creating decent work for women and closing gender gaps in leadership and pay"[70].

"Do nothing": ...and risk undermining progress towards the attainment of UHC, and the overall global response to any future pandemic waves.

In this default scenario, some, but not all, high income destination countries will continue to rely to a significant extent on international inflow of nurses, as they did pre-COVID-19. For some destination countries this has reflected either a deliberate choice or an inability to support sufficient levels of domestic training. And for many OECD countries, the projected increase in demand for healthcare, and an ageing nursing workforce had already pointed to increased staffing shortfalls, and more focus on international recruitment.

In countries where COVID-19 has hit deep, this trend may be now be exacerbated, if the current domestic nursing workforce is depleted by absence and burnout, and demand for healthcare increases even further. For example, in late June 2020, the organisation representing NHS employers in England issued updated guidance "designed to support NHS organisations with their overseas skilled supply as international routes begin to reopen"[71].

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* This could however increase the international inflow of entrants to nurse training

The same default scenario, but for low income, often under-resourced, "source" countries is a short-term spike as the pent-up international outflow of nurses moves as soon as it can. This would then be followed by continued long-term outflow, driven by push factors of relatively low earnings and limited career prospects, and increases the risk that low nurse staffing levels may become even more depleted.

Put simply, in this scenario, unless there is country level policy change related to the nursing workforce, supported by international organisations, pre-COVID-19 trends of flow of nurses from low to high income countries are likely to continue, and the iniquitous mal-distribution of nurses may become more pronounced. This "do nothing" option risks undermining both country level progress towards the attainment of UHC, and the overall global response to any future pandemic waves.

Frame policy action using the WHO Global Code of Practice on the International Recruitment of Health Personnel

OECD has recognised the risk of "doing nothing" on international supply. In its recent paper it noted: "While the international recruitment of foreign health workers has been considered as a quick fix to address skills shortages in some countries during the COVID-19 crisis, it cannot be seen as an efficient or equitable solution. A collective response is needed to address in a sustainable way the global shortage of health workers that the COVID-19 pandemic has once again revealed"[72].

This collective response will require co-ordinated action at both country level, and internationally. Much of it can be framed within a fuller implementation of the WHO Global Code of Practice on the International Recruitment of Health Personnel[73].

Endorsed by all WHO member states in 2010, the Code sets out a framework for a managed and ethical approach to international recruitment, which is located in a broader context of effective domestic health workforce planning and policy, aimed at workforce sustainability, and which includes a commitment to improved data and monitoring of mobility patterns.

The Code has recently been reviewed by an independent Expert Advisory Group (EAG), who made recommendations to be discussed at the World Health Assembly (WHA) in mid May 2020[74]. The full WHA meeting has now been deferred to a later date.

The EAG report to the WHA highlights that "Strengthened implementation of the Code's principles, objectives and articles is needed to ensure that progress towards universal health coverage in Member States serves to support rather than compromise similar achievement in others". It also focused specifically on nursing workforce highlighting that "Across countries, the nursing workforce is an essential component of primary health care and national health systems and constitutes over half of all health professionals globally". Both the report of the Expert Advisory Group and the 2020 State of the World's Nursing report highlight the importance of: "strengthening health workforce related data, education, governance and partnerships, with targeted support and safeguards for countries in greatest need."[75]

Two key policy recommendations in the SOWN report were that countries and regulators should strengthen the implementation of regulations governing international mobility of the nursing workforce, and that countries and international stakeholders should reinforce the implementation of the WHO Global Code of Practice[76].

Taking action on international nurse supply: key post COVID-19 policies at national and international level

The nursing workforce has been central to COVID-19 response effectiveness in all countries. This brief has highlighted that both the immediate and longer lasting effects of COVID-19 could have damaging direct and indirect effects on nurse supply, at national level and globally. This could undermine future responsiveness to pandemics, as well as broader health system effectiveness.

To mitigate these damaging effects, and to improve longer term nurse workforce sustainability, there is a need, as both SOWN and OECD have recently noted, for a co-ordinated policy response to the international supply of nurses.

At country level, this will require implementing policy bundles with two inter-related objectives: to improve retention of domestically trained nurses, and to ensure adequate domestic training capacity. This requires:

- **Assessing, and improving nurse workforce data** in order to be able to understand the current profile of the profession, optimise the retention and deployment of nurses, utilise their skills, monitor and manage internal flows of nurses, and plan for future recruitment and retention.

- **Reviewing, and if necessary, expanding the capacity of the domestic nurse education system** to meet demand, and to sustain long term nurse supply. This should be based on a regular and systematic national nurse labour market analysis, which includes demand led assessment of the projected size, skill profile and deployment of the future nursing workforce, and agreed approaches to filling any identified gaps, through adjustments in supply and in curriculum.

- **Assessing and where necessary improving retention of nurses and the attractiveness of nursing as a career**, by ensuring that the risk of COVID-19 burnout of nurses is addressed, and by the provision of fair pay and conditions of employment, structured career opportunities, and access to continuing education.

- **Implementing policies to enable the nursing workforce contribution to be optimised** through supporting advanced practice and specialist roles, effective skill mix and working patterns, teamworking, and provision of appropriate technology and equipment. This will contribute to retention and attractiveness of nursing, and should include a focus on maintaining an enabling regulatory and legislative framework.

- **Monitoring and tracking nurse self sufficiency**. The self sufficiency indicator of level of percentage reliance on foreign born or foreign trained nurses gives national policy makers an insight into the extent of their dependence on (and potential vulnerability to) international nurse supply. It also enables the country to track and

demonstrate progress to meeting the milestone commitment of the Global strategy on human resources for health, that by 2030: "all countries will have made progress towards halving their dependency on foreign-trained health professionals, implementing the WHO Global Code of Practice on the International Recruitment of Health Personnel"[77].

At international level the policy response must be framed by fuller implementation of the WHO Code objectives. The driver for international action is that lower income countries will continue to be vulnerable to international outflow of nurses, even if all the domestic polices to improve nurse supply were implemented. The necessary actions must be agreed and co-ordinated between countries and international organisations, including ICN, ILO, OECD, WHO and the World Bank:

- **Commitment to effective monitoring of international flows of nurses**, based on complete national datasets using standard measures, rapid analysis, and timely publication, with global coverage, and including country level reporting on nurse "self sufficiency". This will include the regular country reports to WHO on the implementation of the Code, and could be an integral part of future periodic updates of SOWN, as well as tracking progress on the global HRH Strategy. This will enable a clear and current picture of major international flows and changing trends in supply/demand.

- **Commitment to supporting, implementing, documenting and evaluating effective and ethical approaches to managed international supply of nurses**, such as the use of country to country bilateral agreements[78], and fair and transparent recruitment and

employment practices. The evidence base on the implementation of these policies is currently inadequate to effectively shape policy responses and requires improvement.

- **Commitment to supporting regular and systematic national nurse labour market analysis and workforce projections, particularly in resource constrained countries**, by the provision of technical advice and assistance, data improvement, independent analysis, and multi-stakeholder policy dialogues to agree priority policy actions on domestic nurse supply and retention.

- **Commitment to investing in nurse workforce sustainability in small states, lower income states and fragile states, most vulnerable to nurse outflow**, by building on the lessons of the UN High Level Commission on Health Employment and Economic Growth[79], which demonstrated the long term economic, social and population health benefits of investing in expansion of the health workforce.

2020 is the Year of the Nurse. It has also become the year of the COVID-19 pandemic. If these country level and international nurse workforce policy responses are implemented effectively in the next few months and beyond, there can be hope for the future sustainability of supply of the profession.

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