Evidence Brief: Workforce Planning

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Produced by the HEE Knowledge Management team Evidence Briefs offer a quick overview of the published reports, research and evidence on a workforce-related topic. A starter for 10 on the evidence if you will.

HEE Knowledge Management Team, April 2021

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What does workforce planning mean for health and social care?

The NHS in England employs 1.5 million people – it is the country's biggest employer and one of the largest employers globally.[1]

"Effective workforce planning is key to ensuring that the service has enough staff, with the right skills and values to be able to provide excellent patient-centred care, now and in the future. Health Education England (HEE) is responsible for providing system-wide leadership and oversight of workforce planning, education and training for the health service." [2]

In 2015 The King's Fund published a report entitled ["Workforce Planning in the NHS"](), in which they outlined the importance of getting the right balance in the NHS workforce:
"The NHS workforce is the primary driver of future health costs. Given the substantial changes in population demographics and health care needs, the workforce needs to be fit for purpose. That means responding to immediate needs and financial pressures while adapting to deliver the future care models outlined in the NHS five year forward view. Getting the right balance requires a robust understanding of the nature of workforce pressures locally and nationally and what can be done to address them in the short and the long term."

In July 2020 ["We are the NHS: People Plan for 2020/21"]() set out what NHS people could expect from their leaders and each other building on what was published in the Interim People Plan. It emphasised the importance of "greater alignment across workforce, operational and financial planning, with a bigger role

for systems in understanding the numbers and skills of their workforce and deploying them effectively to meet service requirements and local health needs."

The [Interim People Plan](), published jointly by NHS England/Improvement and Health Education England in June 2019, expanded on the recommendation of a workforce implementation plan as laid out in the [Long Term Plan](), published in January 2019. The Interim People Plan focused on "defining the vision for working in the NHS and on setting out the urgent actions" for the coming year. This document stated that in order to "do more to put the people who provide and commission care, and those who receive care, at the heart of our NHS […] we must put workforce planning at the centre of our overall planning processes. We will only transform our services if we transform the way we work." It acknowledges that "even medium-term workforce planning can be challenging for a system as large and complex as the NHS [as] it is intrinsically difficult to predict future NHS funding, patient needs, potential scientific and technological advances, and changes in service models over the time horizon that it takes to train clinical professionals."

The plan recommended:

- Identifying ways of building greater resilience into future workforce plans, based on the principle of enabling people to develop new skills over the course of their career and enabling them to be deployed more flexibly to help employers address short-term supply challenges
- Defining sets of skills-based competencies that can apply across different professional groups and by developing more advanced clinical roles.

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[1] https://www.nuffieldtrust.org.uk/resource/the-nhs-workforce-in-numbers

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[2] https://www.nhsemployers.org/your-workforce/plan

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The [We are the NHS: People Plan 2020/21](#) makes the following recommendations about competency-based workforce planning: "Systems should work with HEE and NHS England and NHS Improvement regional teams to further develop competency-based workforce modelling and planning for the remainder of 2020/21, including assessing any existing skill gap and agreeing system-wide actions to address it. During 2020/21, HEE will develop an online package to train systems in using the HEE Star model for workforce transformation. This training will equip workforce leads with the capability to lead complex workforce conversations across care pathways, provider organisations and systems" (page 48).

Key publications – the big picture

[We are the NHS: People Plan for 2020/21 – action for us all](#) July 2020, NHS
We are the NHS: People Plan 2020/21 – action for us all, along with [Our People Promise](#), sets out what our NHS people can expect from their leaders and from each other. It builds on the creativity and drive shown by our NHS people in their response, to date, to the COVID-19 pandemic and the [interim NHS People Plan](#). It focuses on how we must all continue to look after each other and foster a culture of inclusion and belonging, as well as take action to grow our workforce, train our people, and work together differently to deliver patient care.

[Staffing for Safe and Effective Care in the UK 2019 report: Reviewing the progress of health and care systems against our principles](#) Royal College of Nursing, January 2020

For many years, nursing staff across the UK have been drawing attention to the gap between the current size of the workforce and that which is required to meet the health and care needs of the population. In all types of settings, nurses describe the impact which shortages and increasing demand have upon their ability to deliver safe and effective care. These testimonies are backed by academic research. The impact of these pressures upon patient safety, experience and outcomes, as well as upon the health and wellbeing of nursing staff is well documented. We are clear on what is needed to alleviate these pressures. In 2017, we began to campaign for legislation in all parts of the UK. To give direction to these influencing priorities we set principles to fight for change across the UK. We are clear that that staffing for safe and effective care is dependent upon these principles being fully embedded into legislation and practice in every country of the UK.

[An Integrated Health and Social Care Workforce Plan for Scotland](#) NHS Scotland, December 2019

Sets out our future workforce requirements in a national context and provides revised workforce planning guidance to health and social care employers. This first Integrated Plan will help achieve better integrated workforce planning across health and social care in Scotland. It initiates a programme of work for the future, covering many different employers and settings. And it sets a steady future direction for those who plan for the workforce in this complex landscape. Getting this right is of national importance – everyone in Scotland will rely on this workforce at some point in their lives. That is why this Plan highlights the need to build our workforce; to strengthen the workforce planning infrastructure; to build on our knowledge of the effects on our workforce of changing demand, services, technologies and population; to sharpen our analytical skills and competency,

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locally, regionally and nationally; and to coordinate these actions effectively to ensure the highest quality of health and social care services.

Interim People Plan NHE/I and HEE, June 2019
The Interim NHS People Plan, developed collaboratively with national leaders and partners, sets a vision for how people working in the NHS will be supported to deliver that care and identifies the actions we will take to help them. See Section 5 "A new operating model for workforce"

Untapped potential of health and care data analytics Health Foundation, May 2019
Improvement in the quality of health and care services depends on good-quality analytical support. We need to use data to identify areas of poor care, guide choices about priorities for care, improve efficiency and improve patient care. An organisation's analytical capability is their ability to analyse information and use it to make decisions. However, we know that in practice health and care systems are often not able to draw on high-quality analytical support. There is a shortage of people with the right skills and tools to do analysis, and collaborate with clinicians and managers on using their insights to improve care. This is exacerbated when the analysts we do have spend much of their time doing relatively low-value work – for example, compiling reports that aren't read. By investing in the analytical workforce, we will be able to unlock the full potential of data.

Dynamics of data science The Royal Society, May 2019
The Royal Society's report Dynamics of data science skills (PDF), led by Professor Andrew Blake FREng FRS, looks at the current demand for data professionals, and how this varies across industrial sectors and UK regions. It identifies four major

areas for action to strengthen the UK's data science talent base. There is a high demand for people with data science skills, with specialists in the field being highly sought after across organisations, from government departments to technology start-ups.
Demand for workers with specialist data skills like data scientists and data engineers has more than tripled over five years (+231%). Demand for all types of workers grew by 36% over the same period.

Developing a strategy for the health and care workforce in England: summary of a roundtable discussion The King's Fund, March 2019
Following publication of the draft 10-year workforce strategy Facing the facts, shaping the future, The King's Fund, the Health Foundation and the Nuffield Trust convened a roundtable event to facilitate discussion on the issues it raised. Attendees came from academia, Health Education England, the Department of Health and Social Care, HM Treasury, NHS Improvement, Care Quality Commission, Public Health England, NHS Employers, NHS Providers, Skills for Care, NHS provider trusts, the Office for Budget Responsibility (OBR) and the Institute for Fiscal Studies (IFS). […] The discussion sought to facilitate a diverse range of views and perspectives to inform the work of Health Education England, rather than to arrive at an agreed position or set of actions. The following write up provides an overview of the event and reflects the individual points raised and views expressed in the ensuing discussion.

A critical moment: NHS staff trends, retention and attrition Health Foundation, February 2019

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This is the third annual NHS workforce trends report published by the Health Foundation.
Analysis of the NHS staff profile and trends in England in 2018 largely confirms the trends identified in our 2016 and 2017 reports, and shows an ongoing deterioration for some key staff groups.

The NHS Long Term Plan NHS, January 2019
The NHS Long Term Plan was developed in partnership with those who know the NHS best – frontline health and care staff, patients and their families and other experts.
See Chapter 4 "NHS staff will get the backing that they need" which included the recommendation for the workforce implementation plan

Double or quits: calculating how many more medical students we need Royal College of Physicians of London (RCP), June 2018
This policy brief outlines new calculations for the number of doctors needed, and sets out key issues facing workforce planning in the UK that affect the current supply, future service demand and predicted losses in the workforce.

National Health and Social Care Workforce Plan. Part 3 - Improving workforce planning for primary care in Scotland
Scottish Government, April 2018
This plan will set out how primary care services are in a strong position to respond to the changing and growing needs of our population; describe the anticipated changes in the way services will be developed to meet population need; how Multidisciplinary Teams will be strengthened to deliver an enhanced and sustainable workforce and how we will work with partners to ensure that better quality and more timely data is developed to drive effective local and national workforce planning.

Workforce Planning in the NHS The King's Fund, April 2015
The NHS workforce is the primary driver of future health costs. Given the substantial changes in population demographics and health care needs, the workforce needs to be fit for purpose. That means responding to immediate needs and financial pressures while adapting to deliver the future care models outlined in the NHS five year forward view. Getting the right balance requires a robust understanding of the nature of workforce pressures locally and nationally and what can be done to address them in the short and the long term.

Guidance

Health and Social Care Act 2008 (Regulated Activities) Regulations 2014: Regulation 18 Care Quality Commission, July 2019

The intention of this regulation is to make sure that providers deploy enough suitably qualified, competent and experienced staff to enable them to meet all other regulatory requirements described in this part of the Health and Social Care Act 2008 (Regulated Activities) Regulations 2014. To meet the regulation, providers must provide sufficient numbers of suitably qualified, competent, skilled and experienced staff to meet the needs of the people using the service at all times and the other regulatory requirements set out in this part of the above regulations. Staff must receive the support, training, professional development, supervision and appraisals that are necessary for them to carry out their role and responsibilities. They should be supported to obtain further qualifications and provide evidence, where required, to the appropriate regulator to show that they meet the professional standards needed to continue to practise.

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[The Health and Social Care Act 2008 (Regulated Activities) Regulations 2014](#) UK Government, 2014
(1) Sufficient numbers of suitably qualified, competent, skilled and experienced persons must be deployed in order to meet the requirements of this Part.
(2) Persons employed by the service provider in the provision of a regulated activity must—
(a)receive such appropriate support, training, professional development, supervision and appraisal as is necessary to enable them to carry out the duties they are employed to perform,
(b)be enabled where appropriate to obtain further qualifications appropriate to the work they perform, and
(c)where such persons are health care professionals, social workers or other professionals registered with a health care or social care regulator, be enabled to provide evidence to the regulator in question demonstrating, where it is possible to do so, that they continue to meet the professional standards which are a condition of their ability to practise or a requirement of their role.

[Workforce Planning](#) CIPD, May 2019 *Free registration required to view*
This factsheet examines the concept of workforce planning and looks at recent developments. It examines the distinction between strategic and operational workforce planning, 'hard' and 'soft' workforce planning, which work in conjunction to generate, analyse and action information. The factsheet explores the different stages of the workforce planning process and highlights a number of key issues and action points around its implementation.

[Developing workforce safeguards](#) NHS Improvement, October 2018
Safe, sustainable and productive workforce planning is critical for trusts. 'Developing workforce safeguards' provides a comprehensive set of guidelines on workforce planning and includes new recommendations on reporting and governance approaches.

[Operational workforce planning: a self-assessment tool](#) NHS Improvement, May 2018
Resources to support trusts to carry out an organisational diagnosis and identify areas of improvement. Creating an effective workforce requires an evidence-based workforce plan, integrated with finance, activity and performance plans, and directly involves leaders and managers of the service.

[NMC Briefing Appropriate staffing in health and care setting](#) Nursing and Midwifery Council, Updated 2016
The importance of appropriate staffing was reinforced by the Francis Reports into failings at Mid Staffordshire NHS Foundation Trust in England. Appropriate staffing plays an important part in the delivery of safe and effective health and care. Safe staffing can be a complex area and has to take account of multiple factors. It must be matched to patients' needs and is about skill-mix as well as numbers, about other staff as well as nurses, and other settings as well as hospitals. It is the responsibility of health and care providers, which are regulated by system regulators in the four countries of the UK. As a professional regulator it is not the job of the NMC to set or assure standards related to appropriate staffing. However, it is a matter that has a bearing on what we do in a number of ways. This briefing sets out some of the regulatory considerations raised by this issue.

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[How to ensure the right people, with the right skills, are in the right place at the right time: a guide to nursing, midwifery and care staffing capacity and capability](#) NHS England, November 2013
This guidance, published by the National Quality Board, aims to support providers and commissioners to make the right decisions about nursing, midwifery and care staffing capacity and capability. It outlines expectations related to staffing; signposts tools and resources to support this; and explains what national organisations will do to underpin the expectations.

[Practical approaches to workforce planning: a guide to support workforce planning processes for adult social care and support services](#) Skills for Care, 2014
Workforce planning is essential practice for organisations which provide high quality care and support. A good workforce plan will help an organisation to have the right people with the right knowledge, skills, values and experience in place to meet the changing needs of the business. This guide is aimed at owners, managers and organisational leads responsible for workforce planning in small and medium sized organisations in adult social care, and has been developed and tested in partnership with employers. It explains what workforce planning is, how it fits with workforce commissioning, and how the National Minimum Dataset for Social Care (NMDS-SC) can be used to support it. Together with the workbook, it offers a clear way for employers to develop a workforce plan using the Analyse-Plan-Do-Review approach.

[Understanding safe caseloads in the District Nursing service](#) The Queen's Nursing Institute, September 2016
The District Nursing Service provides nursing care and support for patients, families and carers in homes and communities in every part of the UK. District Nursing teams comprise the District Nurse team leader, registered nurses and health care support workers, and may include allied health professionals and social care workers. District Nursing services often act like a 'sponge', absorbing additional workload in an environment without the physical limits of a defined number of beds. Modelling demand is important not only for operating current services, but crucially to plan services for the future, taking elements into account such as population health, demographics and the opportunity for remote monitoring and supported self-care. This report aims to demonstrate the complexity of creating, maintaining and predicting caseloads within the District Nursing service that are safe for both patients and staff. By describing the elements that should be taken into consideration when planning safe caseloads, the Queen's Nursing Institute (QNI) intends to contribute to the current wider dialogue around workforce planning and deployment of nursing teams in the community setting.

[Your Workforce – Plan](#) NHS Employers
The NHS employs over 1.3 million staff, working in around 300 different types of jobs for more than 1000 employers. Effective workforce planning is key to ensuring that the service has enough staff, with the right skills and values to be able to provide excellent patient-centred care, now and in the future. Health Education England (HEE) is responsible for providing system-wide leadership and oversight of workforce planning, education and training for the health service. Contains links to information on: Workforce supply; Medical workforce; Agency staff; Medical associate professions; Nursing workforce; Electronic staff record and Recruiting from your community.

Models, Tools and Policies

[Six Steps Methodology to Integrated Workforce Planning](#) Skills for Care
Our Six Steps Methodology to Integrated Workforce Planning is a practical approach to planning that ensures you have a workforce of the right size with the right skills and competences. The Methodology identifies those elements that should be in any workforce plan, taking into account the current and future demand for services, the local demographic situation and the impact on other services, whilst helping you work to the budget you can afford.

The Six Steps are:-

• Step 1: Defining the plan
• Step 2: Mapping service change
• Step 3: Defining the required workforce
• Step 4: Understanding workforce availability
• Step 5: Planning to deliver the required workforce
• Step 6: Implement, monitoring and refresh.

[Health workforce planning under conditions of uncertainty: identifying supportive integrated care policies using scenario analysis](#) April 2021, Journal of Integrated Care *Abstract only**
Purpose: Integrated care presents health workforce planers with significant uncertainty. This results from: (1) these workforces are likely in the future to be different from the present, (2) integrated care's variable definitions and (3) workforce policy and planning is not familiar with addressing such challenges. One means to deal with uncertainty is scenario analysis. In this study we reveal some integration-supportive workforce governance and planning policies that were derived from the application of scenario analysis. Design/methodology/approach: Through a mixed methods design that applies content analysis, scenario construction and the policy Delphi method, we analysed a set of New Zealand's older persons health sector workforce scenarios. Developed from data gathered from workforce documents and studies, the scenarios were evaluated by a suitably qualified panel, and derived policy statements were assessed for desirability and feasibility. Findings: One scenario was found to be most favourable, based on its broad focus, inclusion of prevention and references to patient dignity, although funding changes were indicated as necessary for its realisation. The integration-supportive policies are based on promoting network-based care models, patient-centric funding that promotes collaboration and the enhancement of interprofessional education and educator involvement. Originality/value: Scenario analysis for policy production is rare in health workforce planning. We show how it is possible to identify policies to address an integrated care workforce's development using this method. The article provides value for planners and decision-makers by identifying the pros and cons of future situations and offers guidance on how to reduce uncertainty through policy rehearsal and reflection.

[Visualizing the drivers of an effective health workforce: a detailed, interactive logic model](#) March 2021, Human Resources for Health
BACKGROUNDA strong health workforce is a key building block of a well-functioning health system. To achieve health systems goals, policymakers need information on what works to improve and sustain health workforce performance. Most frameworks on health workforce planning and policymaking are high-level and conceptual, and do not provide a structure for synthesizing the growing body of empirical literature on the effectiveness of strategies to strengthen human resources for health (HRH). Our aim is to create a detailed, interactive logic model to map HRH

evidence and inform policy development and decision-making. METHODS: We reviewed existing conceptual frameworks and models on health workforce planning and policymaking. We included frameworks that were: (1) visual, (2) comprehensive (not concentrated on specific outcomes or strategies), and (3) designed to support decision-making. We compared and synthesized the frameworks to develop a detailed logic model and interactive evidence visualization tool. RESULTS: Ten frameworks met our inclusion criteria. The resulting logic model, available at hrhvisualizer.org , allows for visualization of high-level linkages as well as a detailed understanding of the factors that affect health workforce outcomes. HRH data and governance systems interact with the context to affect how human resource policies are formulated and implemented. These policies affect HRH processes and strategies that influence health workforce outcomes and contribute to the overarching health systems goals of clinical quality, responsiveness, efficiency, and coverage. Unlike existing conceptual frameworks, this logic model has been operationalized in a highly visual, interactive platform that can be used to map the research informing policies and illuminating their underlying mechanisms. CONCLUSIONS: The interactive logic model presented in this paper will allow for comprehensive mapping of literature around effective strategies to strengthen HRH. It can aid researchers in communicating with policymakers about the evidence behind policy questions, thus supporting the translation of evidence to policy.

[Advancing the Population Needs-Based Health Workforce Planning Methodology: A Simulation Tool for Country Application](#) February 2021, International Journal of Environmental Research and Public Health
Although the conceptual underpinnings of needs-based health workforce planning have developed over the last two decades, lingering gaps in empirical models and lack of open access tools have partly constrained its uptake in health workforce planning processes in countries. This paper presents an advanced empirical framework for the need-based approach to health workforce planning with an open-access simulation tool in Microsoft® Excel to facilitate real-life health workforce planning in countries. Two fundamental mathematical models are used to quantify the supply of, and need for, health professionals, respectively. The supply-side model is based on a stock-and-flow process, and the need-side model extents a previously published analytical frameworks using the population health needs-based approach. We integrate the supply and need analyses by comparing them to establish the gaps in both absolute and relative terms, and then explore their cost implications for health workforce policy and strategy. To illustrate its use, the model was used to simulate a real-life example using midwives and obstetricians/gynaecologists in the context of maternal and new-born care in Ghana. Sensitivity analysis showed that if a constant level of health was assumed (as in previous works), the need for health professionals could have been underestimated in the long-term. Towards universal health coverage, the findings reveal a need to adopt the need-based approach for HWF planning and to adjust HWF supply in line with population health needs.

[Rethinking workforce planning for integrated care: using scenario analysis to facilitate policy development](#) May 2020, BMC Health Services Research

BACKGROUND A goal of health workforce planning is to have the most appropriate workforce available to meet prevailing needs. However, this is a difficult task when considering integrated care, as future workforces may require different numbers, roles and skill mixes than those at present. With this uncertainty and large variations in what constitutes integrated

care, current health workforce policy and planning processes are poorly placed to respond. In order to address this issue, we present a scenario-based workforce planning approach. METHODS: We propose a novel mixed methods design, incorporating content analysis, scenario methods and scenario analysis through the use of a policy Delphi. The design prescribes that data be gathered from workforce documents and studies that are used to develop scenarios, which are then assessed by a panel of suitably qualified people. Assessment consists of evaluating scenario desirability, feasibility and validity and includes a process for indicating policy development opportunities. RESULTS: We confirmed our method using data from New Zealand's Older Persons Health sector and its workforce. Three scenarios resulted, one that reflects a normative direction and two alternatives that reflect key sector workforce drivers and trends. One of these, based on alternative assumptions, was found to be more desirable by the policy Delphi panel. The panel also found a number of favourable policy proposals. CONCLUSIONS: The method shows that through applying techniques that have been developed to accommodate uncertainty, health workforce planning can benefit when confronting issues associated with integrated care. The method contributes to overcoming significant weaknesses of present health workforce planning approaches by identifying a wider range of plausible futures and thematic kernels for policy development. The use of scenarios provides a means to contemplate future situations and provides opportunities for policy rehearsal and reflection.

Ensuring Sustainability for UK Burns Services: Workforce Planning for Burns Consultants Annals of Plastic Surgery, March 2019 *Abstract only**

INTRODUCTION: Workforce planning is an essential component of organizing any health service. Centralization of burns services pools expertise, although trainees can struggle to achieve adequate exposure to burns training. We aim to review current staffing levels and predict the future consultant numbers required for UK services to remain staffed with appropriately trained surgeons […] CONCLUSION(S): Workforce planning is essential to avoid a short fall in the number of upcoming burns consultants. Plans must be in place to anticipate additional workload with a 10% population rise. With the current struggles of NHS funding, a comprehensive review of burns workforce planning should be undertaken to ensure that sufficient numbers of trainees are completing appropriate burns-specific training and are ready to fill these posts.

The development of a workforce planning toolkit for occupational health nursing services in Ireland Occupational and Environmental Medicine, April 2018

Introduction At a time when health resourcing costs are contracting, it is vital that services examine the potential to maximise the efficiency of their services and resources. The objective of workforce planning is to develop knowledge and intelligence data on the workforce, to inform decisions at local level and to drive improvements in Occupational Health service outcomes. Methods Organisational Development Approach/Practice Development Approach The workforce planning approach involved the following points -. The main stakeholders were committed to and involved in the planning process with clear lines of responsibility and accountability being defined. *Build from a structured information base on current staffing, and relevant activity for departments. *The development of an overview analysis to identify need for and scope for change. *An agreed unit workforce plan, which included a cycle

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of review and update. *Support at National Level was a key factor in this project *The Team Project was part of a Future Leaders Programme with the Royal College of Surgeons in Ireland, Institute of Leadership. Result Approved Workforce Planning Toolkit *The toolkit is robust addressing measurement of demand, capacity, capability, key performance indicators, and business planning. *It has been used within the Workplace Health and Wellbeing Unit for OHS, the toolkit is continually reviewed to ensure that it is user friendly to acknowledge differences in work practices and at the same time promote standardisation. Discussion Optimising Healthcare Workers *This toolkit provides a framework for workforce planning within Occupational Health Nursing *The WHO (2016) predicted a significant shortfall of healthcare workers. *Further work needs to be done in relation to integrated succession planning for Occupational Health Services.

[Is innovative workforce planning software the solution to NHS staffing and cost crisis? An exploration of the locum industry](#)
BMC Health Services Research, March 2018
BACKGROUND: Workforce planning in the British healthcare system (NHS) is associated with significant costs of agency staff employment. The introduction of a novel software (ABG) as a 'people to people economy' (P2PE) platform for temporary staff recruitment offers a potential solution to this problem. Consequently, the focus of this study was twofold - primarily to explore the locum doctor landscape, and secondarily to evaluate the implementation of P2PE in the healthcare industry […] CONCLUSION: IES was used to evaluate ABG and its diffusion against other recruitment methods and ABG was found to outperform its alternatives, thus suggesting its potential to solve the staffing and cost crisis at the chosen hospital.

[What will make a difference? Assessing the impact of policy and non-policy scenarios on estimations of the future GP workforce](#)
Human Resources for Health, June 2017
BACKGROUND: Health workforce planning is based on estimates of future needs for and supply of health care services. Given the pipeline time lag for the training of health professionals, inappropriate workforce planning or policies can lead to extended periods of over- or under-supply of health care providers. Often these policy interventions focus on one determinant of supply and do not incorporate other determinants such as changes in population health which impact the need for services. The aim of this study is to examine the effect of the implementation of various workforce policies on the estimated future requirements of the GP workforce, using South Australia as a case study. This is examined in terms of the impact on the workforce gap (excess or shortage), the cost of these workforce policies, and their role in addressing potential non-policy-related future scenarios.[…] CONCLUSIONS: Over the next 20 years, South Australia's GP workforce is predicted to remain fairly balanced. However, exogenous changes, such as increased demand for GP services may require policy intervention to address associated workforce shortfalls. The workforce model presented in this paper should be updated at regular intervals to inform the need for policy intervention.

[Whole system quality: local benchmarking to improve workforce planning](#) London Journal of Primary Care, March 2017
As a team of workforce analysts and academics with an interest in workforce planning, we are aware that the data available to support primary care workforce planning are disorganised and overwhelming. This makes it difficult for General Practice to extract meaningful and relevant information. We deliver workforce planning workshops across England. Participants at

our workshops regularly express their frustration with the quantity of information they are required to produce and the quality of information they receive from other parts of the system. We are dismayed at what we sense to be growing cynicism with data generation and information analysis and are interested in stimulating a conversation about what data matter and how primary care teams can extract data that are useful.

Balancing the health workforce: breaking down overall technical change into factor technical change for labour-an empirical application to the Dutch hospital industry Human Resources for Health, February 2017

BACKGROUND: Well-trained, well-distributed and productive health workers are crucial for access to high-quality, cost-effective healthcare. Because neither a shortage nor a surplus of health workers is wanted, policymakers use workforce planning models to get information on future labour markets and adjust policies accordingly. A neglected topic of workforce planning models is productivity growth, which has an effect on future demand for labour. However, calculating productivity growth for specific types of input is not as straightforward as it seems. This study shows how to calculate factor technical change (FTC) for specific types of input. […] CONCLUSIONS: Productivity growth, especially of individual outputs, is a neglected topic in workforce planning models. FTC is a productivity measure that is consistent with technical change and accounts for substitution effects. An application to the Dutch hospital industry shows that the FTC of nursing personnel outpaced technical change during 2003-2011. The optimal input mix changed, resulting in fewer nurses being needed to let demand meet supply on the labour market. Policymakers should consider using more detailed and specific data on the nature of technical change when forecasting the future demand for health workers.

Strategic Workforce Planning for Health Human Resources: A Nursing Case Analysis The Canadian Journal of Nursing Research, September 2016 *Abstract only**

Background Health-care organizations provide services in a challenging environment, making the introduction of health human resources initiatives especially critical for safe patient care. Purpose To demonstrate how one specialty hospital in Ontario, Canada, leveraged an employment policy to stabilize its nursing workforce over a six-year period (2007 to 2012). Methods An observational cross-sectional study was conducted in which administrative data were analyzed to compare full-time status and retention of new nurses prepolicy and during the policy. The Professionalism and Environmental Factors in the Workplace Questionnaire was used to compare new nurses hired into the study hospital with new nurses hired in other health-care settings. Results There was a significant increase in full-time employment and a decrease in part-time employment in the study hospital nursing workforce. On average, 26% of prepolicy new hires left the study hospital within one year of employment compared to 5% of new hires during policy implementation. The hospital nurses scored significantly higher than nurses employed in other health-care settings on 5 out of 13 subscales of professionalism. Conclusions Decision makers can use these findings to develop comprehensive health human resources guidelines and mechanisms that support strategic workforce planning to sustain and strengthen the health-care system.

Health Workforce Planning Models, Tools and Processes in Five Countries: an evidence review Health Research Board (HRB) Dublin, 2016

Purpose: Ireland's health sector currently faces significant challenges in the recruitment and retention of health and social

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care professionals to meet the ever-growing demand for healthcare from an ageing population. An integrated national response is required to ensure that Ireland has a fit-for-purpose health workforce with the capacity to deliver high-quality patient care. Workforce planning models are required as part of a fit-for-purpose health workforce. This evidence review examines examples from the health workforce planning frameworks of other countries to highlight the systems, tools, and models used to implement health workforce planning policy and strategies. The aim is to understand the functional requirements of a successful workforce planning approach. Five countries were chosen for examination during an initial scoping exercise by the Health Research Board based on their similarity in size to Ireland or their scattered rural population. The countries chosen were Australia, the Netherlands, New Zealand, Scotland, and Wales.

Pre-implementation studies of a workforce planning tool for nurse staffing and human resource management in university hospitals Journal of Nursing Management, March 2016 *Abstract only**

AIM: To investigate the reliability, validity and feasibility of the RAFAELA workforce planning system (including the Oulu patient classification system - OPCq), before deciding on implementation in Dutch hospitals. BACKGROUND: The complexity of care, budgetary restraints and demand for high-quality patient care have ignited the need for transparent hospital workforce planning. METHODS: Nurses from 12 wards of two university hospitals were trained to test the reliability of the OPCq by investigating the absolute agreement of nursing care intensity (NCI) measurements among nurses. Validity was tested by assessing whether optimal NCI/nurse ratio, as calculated by a regression analysis in RAFAELA, was realistic. System feasibility was investigated through a questionnaire among all nurses involved. RESULTS: Almost 67 000 NCI measurements were performed between December 2013 and June 2014. Agreement using the OPCq varied between 38% and 91%. For only 1 in 12 wards was the optimal NCI area calculated judged as valid. Although the majority of respondents was positive about the applicability and user-friendliness, RAFAELA was not accepted as useful workforce planning system. CONCLUSION AND IMPLICATIONS FOR NURSING MANAGEMENT: Nurses' performance using the RAFAELA system did not warrant its implementation. Hospital managers should first focus on enlarging the readiness of nurses regarding the implementation of a workforce planning system.

Workforce planning for urgent care services Emergency Nurse, July 2015 *Abstract only**

Due to major changes in how emergency care is delivered across different communities, one emergency department is no longer like another. Some have separate minor injury provision, some are general departments that cater for all types of patient, while others are designated major trauma centres. These differences in patient profile affect the required numbers and skill mix of nursing establishments so that the nursing workforce in each cannot be predicated on patient numbers alone. This article describes the development by the RCN Emergency Care Association of an evidence-based staffing tool and how it can be used in practice.

Measuring safe staff levels in the community: the 'DominiC' workforce management tool British Journal of Community Nursing, February 2014 *Abstract only**

There is significant need to establish and predict what numbers of district nursing staff are needed to provide quality patient care. This is the first in a series of articles sharing the evidence-based and tested solutions being used in clinical practice across the UK to inform caseload and workforce planning. Stockport NHS

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Foundation Trust's electronic workload management tool 'DominiC' is explored in this article. The tool promotes continuity of patient care, efficient resource allocation and the benchmarking of care. It predicts future service demands and measures these against the staff resources available. Lessons learned from the process of developing and implementing DominiC are shared to help inform clinicians and managers looking for similar workforce planning solutions.

[Ten years of health workforce planning in the Netherlands: a tentative evaluation of GP planning as an example](#) Human Resources for Health, August 2012

INTRODUCTION: In many countries, health-care labour markets are constantly being challenged by an alternation of shortage and oversupply. Avoiding these cyclic variations is a major challenge. In the Netherlands, a workforce planning model has been used in health care for ten years [...] CONCLUSION: Over the last decade, health workforce planning in the Netherlands has become an accepted instrument for calculating the required supply of health professionals on a regular basis. One of the strengths of the Dutch model is that it can be used for different types of medical and allied health professionals. A weakness is that the model is not yet fully capable of including substitutions between different medical professions to plan from a skill-mix perspective. Several improvements remain possible.

[Managing a national radiation oncologist workforce: a workforce planning model](#) Radiotherapy and Oncology, April 2012 *Abstract only* *

PURPOSE: The specialty of radiation oncology has experienced significant workforce planning challenges in many countries. Our purpose was to develop and validate a workforce-planning model that would forecast the balance between supply of, and demand for, radiation oncologists in Canada over a minimum 10-year time frame, to identify the model parameters that most influenced this balance, and to suggest how this model may be applicable to other countries[…] CONCLUSIONS: Workforce planning in radiation oncology is possible using a projection calculation model based on current system characteristics and modifiable parameters that influence projections. The workload projections should inform policy decision making regarding growth of the specialty and training program resident intake required to meet oncology health services needs. The methods used are applicable to workforce planning for radiation oncology in other countries and for other comparable medical specialties.

[Using staffing ratios for workforce planning: evidence on nine allied health professions](#) Human Resources for Health, February 2012

BACKGROUND: Modern healthcare managers are faced with pressure to deliver effective, efficient services within the context of fixed budget constraints. Managers are required to make decisions regarding the skill mix of the workforce particularly when staffing new services. One measure used to identify numbers and mix of staff in healthcare settings is workforce ratio. The aim of this study was to identify workforce ratios in nine allied health professions and to identify whether these measures are useful for planning allied health workforce requirements. METHODS: A systematic literature search using relevant MeSH headings of business, medical and allied health databases and relevant grey literature for the period 2000-2008 was undertaken. RESULTS: Twelve articles were identified which described the use of workforce ratios in allied health services. Only one of these was a staffing ratio linked to clinical outcomes. The most comprehensive measures were identified in rehabilitation medicine. CONCLUSION: The evidence for use of staffing ratios for allied health practitioners is scarce and lags behind the fields of nursing and medicine.

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[A model linking clinical workforce skill mix planning to health and health care dynamics](#) Human Resources for Health, April 2010

BACKGROUND: In an attempt to devise a simpler computable tool to assist workforce planners in determining what might be an appropriate mix of health service skills, our discussion led us to consider the implications of skill mixing and workforce composition beyond the 'stock and flow' approach of much workforce planning activity. METHODS: Taking a dynamic systems approach, we were able to address the interactions, delays and feedbacks that influence the balance between the major components of health and health care. RESULTS: We linked clinical workforce requirements to clinical workforce workload, taking into account the requisite facilities, technologies, other material resources and their funding to support clinical care microsystems; gave recognition to productivity and quality issues; took cognisance of policies, governance and power concerns in the establishment and operation of the health care system; and, going back to the individual, gave due attention to personal behaviour and biology within the socio-political family environment .CONCLUSION: We have produced the broad endogenous systems model of health and health care which will enable human resource planners to operate within real world variables. We are now considering the development of simple, computable national versions of this model.

[Health workforce planning in Europe: Creating learning country clusters](#) Health Policy, December 2015 *Abstract only**

In this article, the different dimensions and determinants of health workforce planning (HWF) are investigated to improve context-sensitivity and mutual learning among groups of countries with similar HWF characteristics. A novel approach to scoring countries according to their HFW characteristics and type of planning is introduced using data collected in 2012 by a large European Union project involving 35 European countries (the 'Matrix Study' [8]). HWF planning is measured in terms of three major dimensions: (1) data infrastructure to monitor the capacities and dynamics of health workforces, (2) the institutions involved in defining and implementing labour market regulations, and (3) the availability of models to estimate supply-demand gaps and to forecast imbalances. The result shows that the three dimensions of HWF planning are weakly interrelated, indicating that countries invest in HWF in different ways. Determinant analysis shows that countries with larger health labour markets, National Healthcare Service (NHS), mobility, and strong primary health care score higher on HWF planning dimensions than others. Consequently, the results suggest that clustering countries with similar conditions in terms of HWF planning is a way forward towards mutual and contextual learning.

[Examining pharmacy workforce issues in the United States and the United Kingdom](#) American Journal of Pharmaceutical Education, March 2015

OBJECTIVE: To examine available data and actions surrounding current pharmacy workforce issues in the United States and United Kingdom. METHODS: Published pharmacy workforce data from the United States and United Kingdom were gathered from various sources, including PUBMED, Internet search engines, and pharmacy organization websites. Data was collated from additional sources including scientific literature, internal documents, news releases, and policy positions. RESULTS: The number of colleges and schools of pharmacy has expanded by approximately 50% in both the United States and United Kingdom over the previous decade. In the United States, continued demand for the pharmacy workforce has been

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forecasted, but this need is based on outdated supply figures and assumptions for economic recovery. In the United Kingdom, workforce modeling has predicted a significant future oversupply of pharmacists, and action within the profession has attempted to address the situation through educational planning and regulation. CONCLUSION: Workforce planning is an essential task for sustaining a healthy profession. Recent workforce planning mechanisms in the United Kingdom may provide guidance for renewed efforts within the profession in the United States.

[A Comparison of Nursing Education and Workforce Planning Initiatives in the United States and England](#) Policy, Politics and Nursing Practice, November 2017

Health care systems in England and the United States are under similar pressures to provide higher quality, more efficient care in the face of aging populations, increasing care complexity, and rising costs. In 2010 and 2011, major strategic reports were published in the two countries with recommendations for how to strengthen their respective nursing workforces to address these challenges. In England, it was the 2010 report of the Prime Minister's Commission on the Future of Nursing and Midwifery, Front Line Care: The Future of Nursing and Midwifery in England. In the United States, it was the Institute of Medicine's report The Future of Nursing: Leading Change, Advancing Health. The authors of both reports recommended shifting entry level nursing education to the baccalaureate degree and building capacity within their educational systems to prepare nurses as leaders, educators, and researchers. This article will explore how, with contrasting degrees of success, the nursing education systems in the United States and England have responded to these recommendations and examine how different regulatory and funding structures have hindered or enabled these efforts.

[Not enough doctors or not enough needs? Refocusing health workforce planning from providers and services to populations and needs](#) Journal of Health Services Research & policy, April 2013 *Abstract only**

The importance of allocating services in accordance with population needs is well-established. Needs-based approaches to geographical resource allocation were established in the National Health Service in the UK in the 1970s, but the role of population needs has not extended to planning for the quantity and mix of health care services or for the providers required to deliver these services. We present a framework that integrates health service and workforce planning focused on responding to population needs. Using data from the General Household Survey for England over the period 1985–2006, we illustrate trends in health needs and service use per capita. Despite needs per capita falling, service use has increased. Rates of increase in service use are greater among those with less needs illustrating that, in the absence of appropriate planning methods, increases in service use may result from supplier influence rather than policy decisions.

[Planning a dental workforce for the future for the National Health Service in the United Kingdom: What factors should be accounted for?](#) Health Education Journal, May 2012 *Abstract only**

The two most common models of workforce planning are the 'stock and flow' and the demographic approach. The former balances future losses from a system against recruitment and retention, whilst the latter simply 'grosses up' current provision based on changes to population demographics. However, such approaches ignore the impact of improving health and can confuse demand with population need. On the supply side, they also assume that there will be no changes to working practice in respect of service levels and service delivery, or any

improvements in medical technology. This paper aims to examine the complex interactions between these factors in order to take a more considered approach to workforce planning in dentistry.

[Patient need at the heart of workforce planning: the use of supply and demand analysis in a large teaching hospital's acute medical unit](#) Clinical Medicine, 2012

Timely medical assessment is integral to the safety and quality of healthcare delivery in acute medicine. Medical staff are an expensive resource. This study aimed to develop a modelling system that facilitated efficient workforce planning according to patient need on the acute medical unit. A realistic 24 hour 'supply' of junior doctors was calculated by adjusting the theoretical numbers on the rota for leave allowances, natural breaks and other ward duties by a combination of direct observation of working practice and junior doctor interviews. 'Demand' was analysed using detailed admission data. Supply and demand were then integrated with data from a survey of the time spent on the process of clerking and assessment of medical admissions. A robust modelling system that predicted the number of unclerked patients was developed. The utility of the model was assessed by demonstrating the impact of a regulation-compliant redesign of the rota using existing staff and by predicting the most efficient use of an additional shift. This simple modelling system has the potential to enhance quality of care and efficiency by linking workforce planning to patient need.

[Addressing workforce capacity and safety issues for new nurse-led services through competency modelling](#) Clinical Governance, 2012 *Abstract only**
PURPOSE: The purpose of this paper is to show how competency models can be used to govern the increased

autonomy of advanced practitioners in nursing, and to assist in workforce development. […] PRACTICAL IMPLICATIONS: This study suggests that competency modelling can contribute to the effectiveness of ANP education, help to address workforce planning issues and provide re-assurance for commissioners in terms of governance and safety. ORIGINALITY/VALUE: Competency modelling for ANPs in the UK is in its infancy, but the lack of a safe and competent workforce is a barrier to innovation for commissioners of services.

[Models and tools for health workforce planning and projections](#) World Health Organisation, June 2010
The formulation of national human resources for health (HRH) policies and strategies requires evidence-based planning to rationalize decisions. A range of tools and resources exists to assist countries in developing a national HRH strategic plan. Such plans normally include short- and long-term targets and cost estimates for scaling up education and training for health workers, reducing workforce imbalances, strengthening the performance of staff, improving staff retention and adapting to any major health sector reforms, while also being harmonized with broader strategies for social and economic development.

Evaluating Workforce Planning – Opportunities and Challenges

[Effective workforce planning: Understanding final-year nursing and midwifery students' intentions to migrate after graduation](#) March 2021, Journal of Nursing Management *Abstract only**
AIMS: To examine the factors influencing final-year nursing/midwifery students' intentions to migrate following

graduation. BACKGROUND: With expanding global staff shortages, effective recruitment and retention strategies targeted at new nursing/midwifery graduates are necessary. Understanding factors that influence graduates' decisions to migrate or remain in the health care organisation that supported their education is essential but under-researched. METHOD(S): A cross-sectional electronic survey was distributed to graduating nursing/midwifery students across nine higher education institutions in Ireland with a 36% (N = 407) response rate. RESULT(S): 85% of Irish (n = 376) nursing/midwifery graduating students reported an intention to migrate overseas and 70% intend to return within 5 years. Pay, working conditions and career were ranked as influencing intentions to migrate. Multivariable analysis illustrated that educational opportunities and friends predict migration, while family and obligation were protective factors. CONCLUSION(S): Nursing and midwifery leaders and policymakers must reconsider recruitment and retention strategies and embrace innovative and responsive approaches to address migration intentions and trends. IMPLICATIONS FOR NURSING/MIDWIFERY MANAGEMENT: Strategic leadership is required to develop effective structures that support personal, professional and career opportunities for new graduates. Targeted recruitment innovations to entice graduates back into the health service are recommended.

[We're not there to protect ourselves, we're there to talk about workforce planning": A qualitative study of policy dialogues as a mechanism to inform medical workforce planning](#) July 2020, Health Policy *Abstract only**

INTRODUCTION: To address a disjuncture between medical workforce research and policy activities in Ireland, a series of national level policy dialogues were held between policy stakeholders and researchers to promote the use of research evidence in medical workforce planning. This article reports on findings from a qualitative study of four policy dialogues (2013-2016), the aim of which was to analyse policy dialogues as a mechanism for knowledge-sharing and interaction to support medical workforce planning. METHODS: Descriptive qualitative study design involving in-depth interviews with policy stakeholders and researchers (n = 13) who participated in the policy dialogues; thematic analysis of interview transcripts. FINDINGS: Periodic policy dialogues, with discussion focused on research evidence, provided an enabling environment for exchange and interaction between policy stakeholders and researchers, and between policy stakeholders themselves. Findings foreground the significance of the policy-making context, in terms of how people interact during policy dialogues, and how research can potentially (or not) inform medical workforce planning. CONCLUSION: Policy dialogues provide a mechanism for improving knowledge exchange and interaction between policy stakeholders and researchers. Situated within the policy context, policy dialogues also add value to: a) policy-making processes by facilitating interactions between policy stakeholders outside the day-to-day business of formal and sometimes adversarial negotiation; b) research processes, including exposing researchers to the complexity of health workforce planning, and health policy more generally.

[The times are changing: workforce planning, new health-care models and the need for interprofessional education in Australia](#) Journal of Interprofessional Care, May 2019 *Abstract only** Following a history of the Australian health system and funding models, we outline workforce issues, in particular, the lack of health professionals in regional locations. The role of the Australian government health departments in workforce planning is discussed. We describe research funded by the

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Commonwealth government focussing on the development of interprofessional education (IPE) for collaborative practice. New models of interprofessional care have been introduced to help tackle the population needs: in the Australian Capital Territory (ACT); HealthOne in New South Wales; health-care homes nationally; and partnerships between pharmacists and general practitioners in Victoria. Changes in care delivery necessitate innovations in health education, however how IPE is embedded in Australian health professional education still varies. There is a growing sense of an IPE community complemented by an interest in IPE from peak policy and workforce bodies. There are changes underway in health professional registration and accreditation that are likely to regulate shared and common learning to enable the continuous development of a flexible, responsive and sustainable health workforce. We conclude that there are significant opportunities for further development of IPE and collaborative practice as key strategies for adding to the ability of health systems to address individual needs in conjunction with aiming for optimal and universal health coverage.

[NHS managers' user of nursing workforce planning and deployment technologies: a realist synthesis](#) NIHR Journals Library, November 2018
This synthesis resulted in seven configurations that constitute a programme theory about what works to support NHS managers in the implementation of workforce planning and deployment technologies for nurse staffing.

[Is innovative workforce planning software the solution to NHS staffing and cost crisis? An exploration of the locum industry](#) BMC Health Services Research, March 2018
Background: Workforce planning in the British healthcare system (NHS) is associated with significant costs of agency staff employment. The introduction of a novel software (ABG) as a 'people to people economy' (P2PE) platform for temporary staff recruitment offers a potential solution to this problem. Consequently, the focus of this study was twofold – primarily to explore the locum doctor landscape, and secondarily to evaluate the implementation of P2PE in the healthcare industry. Methods: Documentary analysis was conducted alongside thirteen semi structured interviews across five informant groups: two industry experts, two healthcare consultants, an executive director, two speciality managers and six doctors. Results: We found that locum doctors are indispensable to covering workforce shortages, yet existing planning and recruitment practices were found to be inefficient, inconsistent and lacking transparency. Contrarily, mobile-first solutions such as ABG seem to secure higher convenience, better transparency, cost and time efficiency. We also identified factors facilitating the successful diffusion of ABG; these were in line with classically cited characteristics of innovation such as trialability, observability, and scope for local reinvention. Drawing upon the concept of value-based healthcare coupled with the analysis of our findings led to the development of Information Exchange System (IES) model, a comprehensive framework allowing a thorough comparison of recruitment practices in healthcare. Conclusion: IES was used to evaluate ABG and its diffusion against other recruitment methods and ABG was found to outperform its alternatives, thus suggesting its potential to solve the staffing and cost crisis at the chosen hospital.

[A scoping review of nursing workforce planning and forecasting research](#) Journal of Nursing Management, November 2017
Abstract only*
AIM: This study will critically evaluate forecasting models and their content in workforce planning policies for nursing

professionals and to highlight the strengths and the weaknesses of existing approaches. BACKGROUND: Although macro-level nursing workforce issues may not be the first thing that many nurse managers consider in daily operations, the current and impending nursing shortage in many countries makes nursing specific models for workforce forecasting important. METHOD: A scoping review was conducted using a directed and summative content analysis approach to capture supply and demand analytic methods of nurse workforce planning and forecasting. The literature on nurse workforce forecasting studies published in peer-reviewed journals as well as in grey literature was included in the scoping review. RESULTS: Thirty six studies met the inclusion criteria, with the majority coming from the USA. Forecasting methods were biased towards service utilization analyses and were not consistent across studies. CONCLUSION: Current methods for nurse workforce forecasting are inconsistent and have not accounted sufficiently for socioeconomic and political factors that can influence workforce projections. Additional studies examining past trends are needed to improve future modelling. IMPLICATIONS FOR NURSING MANAGEMENT: Accurate nursing workforce forecasting can help nurse managers, administrators and policy makers to understand the supply and demand of the workforce to prepare and maintain an adequate and competent current and future workforce.

Is health workforce planning recognising the dynamic interplay between health literacy at an individual, organisation and system level? Australian Health Review, February 2016
The growing demands on the health system to adapt to constant change has led to investment in health workforce planning agencies and approaches. Health workforce planning approaches focusing on identifying, predicting and modelling workforce supply and demand are criticised as being simplistic and not contributing to system-level resiliency. Alternative evidence- and needs-based health workforce planning approaches are being suggested. However, to contribute to system-level resiliency, workforce planning approaches need to also adopt system-based approaches. The increased complexity and fragmentation of the healthcare system, especially for patients with complex and chronic conditions, has also led to a focus on health literacy not simply as an individual trait, but also as a dynamic product of the interaction between individual (patients, workforce)-, organisational- and system-level health literacy. Although it is absolutely essential that patients have a level of health literacy that enables them to navigate and make decisions, so too the health workforce, organisations and indeed the system also needs to be health literate. Herein we explore whether health workforce planning is recognising the dynamic interplay between health literacy at an individual, organisation and system level, and the potential for strengthening resiliency across all those levels.

Rheumatology Workforce Planning in Western Countries: A Systematic Literature Review Arthritis Care and Research, December 2016
OBJECTIVE: To compare health care planning models forecasting rheumatology workforce requirements in western countries.[…] CONCLUSION: Heterogeneity in methods used, the period or calendar years for which the estimates were projected, and heterogeneity of variables evaluated led to disparate estimates, with results ranging from 0.7 to 3.5 rheumatologists per 100,000 population. An international initiative is needed to agree upon a common approach for a reliable estimation of manpower requirements in rheumatology.

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[Workforce planning and development in times of delivery systems transformation](#) BMC Human Resources for Health, 2016
Background: As implementation of the US Affordable Care Act (ACA) advances, many domestic health systems are considering major changes in how the healthcare workforce is organized. The purpose of this study is to explore the dynamic processes and interactions by which workforce planning and development (WFPD) is evolving in this new environment. Methods: Informed by the theory of loosely coupled systems (LCS), we use a case study design to examine how workforce changes are being managed in Kaiser Permanente and Montefiore Health System. We conducted site visits with in-depth interviews with 8 to 10 stakeholders in each organization. Results: Both systems demonstrate a concern for the impact of change on their workforce and have made commitments to avoid outsourcing and layoffs. Central workforce planning mechanisms have been replaced with strategies to integrate various stakeholders and units in alignment with strategic growth plans. Features of this new approach include early and continuous engagement of labor in innovation; the development of intermediary sense-making structures to garner resources, facilitate plans, and build consensus; and a whole system perspective, rather than a focus on single professions. We also identify seven principles underlying the WFPD processes in these two cases that can aid in development of a new and more adaptive workforce strategy in healthcare. Conclusions: Since passage of the ACA, healthcare systems are becoming larger and more complex. Insights from these case studies suggest that while organizational history and structure determined different areas of emphasis, our results indicate that large-scale system transformations in healthcare can be managed in ways that enhance the skills and capacities of the workforce. Our findings merit attention, not just by healthcare administrators and union leaders, but by policymakers and scholars interested in making WFPD policies at a state and national level more responsive.

[Handling healthcare workforce planning with care: where do we stand?](#) Human Resources for Health, May 2015
BACKGROUND: Planning the health-care workforce required to meet the health needs of the population, while providing service levels that maximize the outcome and minimize the financial costs, is a complex task. The problem can be described as assessing the right number of people with the right skills in the right place at the right time, to provide the right services to the right people. The literature available on the subject is vast but sparse, with no consensus established on a definite methodology and technique, making it difficult for the analyst or policy maker to adopt the recent developments or for the academic researcher to improve such a critical field.[…] CONCLUSION: Methodologies abound, but there is still no definite approach to address HHR planning. Recent literature suggests that an integrated approach is the way to solve such a complex problem, as it combines elements both from supply and demand, and more effort should be put in improving that proposal.

[Health and social care workforce planning and development--an overview](#) International Journal of Health Care Quality Assurance, 2014 Athens log in required*
PURPOSE: The purpose of this paper is to discuss the issues relating to getting the right health and social care staff with the right skills in the right place at the right time and at the right price.[…].PRACTICAL IMPLICATIONS: This paper underlines triangulated workforce demand and supply methods (described in the paper), which help planners to equalise workloads among disparate groups and isolated practitioners--an important job satisfaction and staff retention issue. Regular and systematic workforce reviews help planners to justify their staffing

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establishments; it seems vital, therefore, that they have robust methods and supporting data at their fingertips.
ORIGINALITY/VALUE: This paper stock-takes the latest health and social care workforce planning and development issues.

[Exploring the relationship between governance mechanisms in healthcare and health workforce outcomes: a systematic review](#)
BMC Health Services Research, January 2014
Background: The objective of this systematic review of diverse evidence was to examine the relationship between health system governance and workforce outcomes. Particular attention was paid to how governance mechanisms facilitate change in the workforce to ensure the effective use of all health providers […]
Conclusions: The results of the review show that while there are governance mechanisms that consider workforce impacts, it is not to the extent one might expect given the importance of the workforce for improving patient outcomes. Furthermore, to successfully implement governance mechanisms in this domain, there are key strategies recommended to support change and achieve desired outcomes. The most important of these are: to build trust by clearly articulating the organization's goal; considering the workforce through planning, implementation, and evaluation phases; and providing strong leadership.

[The politics of health workforce planning and forecasting](#)
Eurohealth, 2014
Planning the health workforce is key when modernising health care systems throughout the European Union (EU). As health policy-makers and researchers have long argued, current data collected at national level on the health workforce tend to be fragmented, incomplete, and not comparable. Therefore, a comprehensive picture on how to plan and forecast the nursing workforce at EU level can be obtained by deploying four

categories: health care assistant, general care nurse, specialist nurse and advanced nurse practitioner.

[Workforce planning must move away from boom and bust cycles](#)
Nursing Times, 2013 Athens log in required*
Pre-registration student numbers in nursing, midwifery and the allied health professions are also likely to continue to be seen as an easier target for cuts than investment in medical education, where the time lag for change is greater.

[Discussion piece - Changing imperatives in workforce planning: implications for health and social care education](#) Chartered Society of Physiotherapy, UK, October 2013
Workforce planning forms an increasing focus within health and social care policy and structural development, with concern to ensure that workforce supply demonstrably meets demand (in terms of population, patient, service and practice needs). While particularly apparent in England, this trend can be seen elsewhere in the United Kingdom. This article considers the implications of this trend for health and social care education, including practice education. Although having a particular emphasis on challenges and opportunities for the allied health professions, the article considers the issues more generically. Workforce planning is now seen within policy as key to addressing priority population and patient care needs; achieving service improvements while containing expenditure; and ensuring that patient needs are put first. The size, profile and skills development of the workforce is therefore being placed centre-stage in order to enhance service design and delivery, assure clinical and cost-effectiveness, and deliver compassionate care. These developments raise both challenges and opportunities for education providers. Within curriculum design and delivery, an increasing focus is needed on developing the knowledge, skills and aptitude required for clinical

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leadership and inter-professional collaboration, and on evidencing the value, impact and professionalism of individual practitioners, services and professions. This is producing a related, stronger focus on how practice education prepares future members of the workforce for more flexible, diverse roles in safe, patient-centred ways. New approaches to workforce planning are creating increased opportunity for education to demonstrate how it both responds to and leads change, while affirming quality assurance imperatives.

[Nurse migration and health workforce planning: Ireland as illustrative of international challenges](#) Health Policy, September 2012
Ireland began actively recruiting nurses internationally in 2000. Between 2000 and 2010, 35% of new recruits into the health system were non-EU migrant nurses. Ireland is more heavily reliant upon international nurse recruitment than the UK, New Zealand or Australia. This paper draws on in-depth interviews (N=21) conducted in 2007 with non-EU migrant nurses working in Ireland, a quantitative survey of non-EU migrant nurses (N=337) conducted in 2009 and in-depth interviews conducted with key stakeholders (N=12) in late 2009/early 2010. Available primary and secondary data indicate a fresh challenge for health workforce planning in Ireland as immigration slows and nurses (both non-EU and Irish trained) consider emigration. Successful international nurse recruitment campaigns obviated the need for health workforce planning in the short-term, however the assumption that international nurse recruitment had 'solved' the nursing shortage was short-lived and the current presumption that nurse migration (both emigration and immigration) will always 'work' for Ireland over-plays the reliability of migration as a health workforce planning tool. This article analyses Ireland's experience of international nurse recruitment 2000-2010,

providing a case study which is illustrative of health workforce planning challenges faced internationally.

[Workforce planning and flexible working in the NHS of the future](#)
The Journal of the Royal College of Physicians of Edinburgh, December 2011
There is an increasingly urgent need to review working patterns and future workforce planning now that women make up 42% of all doctors – 28% of hospital consultants and 47% of GPs.1 Within a few years, predicted to be between 2017 and 2022, the majority of the medical workforce will be female.2 Already in 2010 there were 46% more female foundation year one (F1) doctors than male.2 The age distribution of the current workforce has also altered significantly, with the recent rise in output from medical schools, with many of today's workforce yet to start their families. Thus, in future, even traditionally male-dominated intensive hospital specialities with unpredictable out-ofhours work will have to adapt to ensure they can attract and retain enough of the future predominantly female workforce to maintain their out-of-hours cover at a safe and sustainable level in European Working Time Directive (EWTD) compliant rotas.

[The policy context for skill mix in the National Health Service in the United Kingdom](#) British Dental Journal, September 2011
Workforce planning is essential if the future capacity of a state funded system and the supply of clinicians is to match the future need for care. Important aspects of this process are exploring the influences on productivity and the level of service that is necessary for a state funded system. Labour substitution has a direct impact upon the productivity of the workforce, yet the use of skill mix in dentistry is an area where the dental profession has lagged behind their medical colleagues. This brief paper explores the policy context for labour substitution, highlighting key barriers

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to its integration, potential drivers for change and future areas for research.

[An international call to arms to improve allied health workforce planning](#) Journal of Allied Health, 2011 Athens log in required*
Although the funding and organization of the health care systems in the United States and England are quite different, there are striking similarities in the allied health workforce planning challenges facing the two countries. This paper identifies some common issues facing workforce policy-makers in both countries and suggests key next steps to enhance workforce research and planning in both countries, including the creation of a national minimum data set for allied health professions.

[Who does workforce planning well? Workforce review team rapid review summary](#) International Journal of Health Care Quality Assurance, 2010 *Athens log in required*
PURPOSE: This paper sets out to disseminate new knowledge about workforce planning, a crucial health sector issue. The Health Select Committee criticised NHS England's failure to develop and apply effective workforce planning. The Workforce Review Team (WRT) commissioned the Institute for Employment Research, Warwick University, to undertake a "rapid review" of global literature to identify good practice. A workforce planning overview, its theoretical principles, good practice exemplars are provided before discussing their application to healthcare. […]
PRACTICAL IMPLICATIONS: There was no evidence to challenge current WRT approaches to NHS England workforce planning. There are a number of indications about how this might be extended and improved, given additional resources. The evidence-base for workforce planning would be strengthened by robust and authoritative studies. ORIGINALITY/VALUE: Systematic workforce planning is a key healthcare quality management element. This review highlights useful information

that can be turned into knowledge by informed application to the NHS. Best practice in other sectors and other countries appears to warrant exploration.

[Evaluating the strengths and weaknesses of NHS workforce planning methods](#) Nursing Times, 2010 *Abstract only*
This article examines the different methods used in NHS workforce planning and development and their strengths and weaknesses. It is a summary and update of the nurse staffing study commissioned by the Department of Health (Hurst, 2003). The article is designed to help nurse managers select and apply methods for reviewing or estimating their staffing needs, and looks at the future for workforce planning and development.

[Medical-workforce planning: an art of science? The difficult problem of matching supply and demand](#) Human Resources Management International Digest, 2010 *Athens log in required*
This paper illustrates how the NHS workforce-review team looks at the area of medical workforce planning and some of the problems that planners face. The paper describes a structure for workforce planning and examines some of the challenges workforce planners and those working in the human-resources field face. It argues that workforce planning is more than simply number crunching; it requires the application of both art and science skills. This study demonstrates how the workforce is calculated in terms of the need, demand and supply for the future. The paper highlights the important advantages, for individual organizations as well as for society as a whole, which can result from successful workforce planning. This study fills a gap in the literature about whether workforce planning is an art or science.

Programmes

[How evidence-based workforce planning in Australia is informing policy development in the retention and distribution of the health workforce](#) Human Resources for Health, February 2014
BACKGROUND: Australia's health workforce is facing significant challenges now and into the future. Health Workforce Australia (HWA) was established by the Council of Australian Governments as the national agency to progress health workforce reform to address the challenges of providing a skilled, innovative and flexible health workforce in Australia. HWA developed Australia's first major, long-term national workforce projections for doctors, nurses and midwives over a planning horizon to 2025 (called Health Workforce 2025; HW 2025), which provided a national platform for developing policies to help ensure Australia's health workforce meets the community's needs […] CONCLUSION: While HW 2025 has provided a national platform for health workforce policy development, it is not a one-off project. It is an ongoing process where HWA will continue to develop and improve health workforce projections incorporating data and methodology improvements to support incremental health workforce changes.

[Workload and workforce planning: devolving the programme](#)
Nursing Management, June 2010 *Athens log in required**
This article describes how implementing the Nursing and Midwifery Workload and Workforce Planning programme has been devolved from central government to individual NHS boards, and how its implementation has helped to ensure that senior nursing staff have become aware of their accountability for workload and workforce planning.

[Workload and workforce planning: supplementary staffing](#)
Nursing Management, May 2010 *Athens log in required**
This article describes how an over-reliance on agency staff in the NHS in Scotland has been addressed by the creation of unified, board-wide nurse banks; the development of a national nurse agency contract; and the use of tools devised by the Nursing and Midwifery Workload and Workforce Planning programme.

[Workload and workforce planning: developing a learning toolkit](#)
Nursing Management, April 2010 *Athens log in required**

The second article in this series described the tools for which there is a consensus for use in nursing and midwifery workload and workforce planning (NMWWP) in Scotland, and the national programme of education and training support developed for the staff who would be using the tools in NHS boards. To help senior charge nurses, midwives and others support and manage their staff resources effectively, a learning toolkit has been developed by the NMWWP programme in partnership with NHS Education for Scotland. The NMWWP learning toolkit (NHS Education for Scotland 2008), described in this article, is a flexible, practical, work-based resource for use in NHS boards. Intended primarily for senior charge nurses, it can also be used by other professionals who aspire to senior charge nurse positions and by nurse managers as a knowledge-refresher.

[Workload and workforce planning: tools, education and training](#)
Nursing Management, March 2010 *Athens log in required**
The Nursing and Midwifery Workload and Workforce Planning programme for Scotland, the origins of which were described in last month's Nursing Management, does not solve all the problems faced by workforce planners. However, it can provide evidence that informs decisions, workload and workforce changes and a suite of tools has been developed, evaluated and

introduced to help healthcare staff gather this evidence. In this article, these tools, and the education and training initiatives that help staff use them, are described.

[Workload and workforce planning: taking a national approach](#)
Nursing Management, February 2010 *Athens log in required**
In response to an Audit Scotland report, the Scottish Executive, now the Scottish Government, set up the national Nursing and Midwifery Workload and Workforce Planning (NMWWP) programme to define workload and workforce needs, and to analyse the use of bank and agency staff. After extensive research, a systematic, national approach to nursing and midwifery workload and workforce planning was recommended. This article, the first in a series of five on this topic, describes the legislation and policies that underpin the NMWWP programme, and highlights the demographic issues that are pertinent to the nursing and midwifery workforce in Scotland.

Nurse Practitioners and Physician Assistants

[Health workforce planning: which countries include nurse practitioners and physician assistants and to what effect?](#) Health Policy, October 2018 *Abstract only**
BACKGROUNDAn increasing number of countries are introducing new health professions, such as Nurse Practitioners (NPs) and Physician Assistants (PAs). There is however limited evidence, on whether these new professions are included in countries' workforce planning.METHODSA cross-country comparison of workforce planning methods. Countries with NPs and/or PAs were identified, workforce planning projections reviewed and differences in outcomes were analysed, based on

a review of workforce planning models and a scoping review. Data on multi-professional (physicians/NPs/PAs) vs. physician-only models were extracted and compared descriptively. Analysis of policy implications was based on policy documents and grey literature. RESULTS: Of eight countries with NPs/PAs, three (Canada, the Netherlands, United States) included these professions in their workforce planning. In Canada, NPs were partially included in Ontario's needs-based projection, yet only as one parameter to enhance efficiency. In the United States and the Netherlands, NPs/PAs were covered as one of several scenarios. Compared with physician-only models, multi-professional models resulted in lower physician manpower projections, primarily in primary care. A weakness of the multi-professional models was the accuracy of data on substitution. Impacts on policy were limited, except for the Netherlands. CONCLUSIONS: Few countries have integrated NPs/PAs into workforce planning. Yet, those with multi-professional models reveal considerable differences in projected workforce outcomes. Countries should develop several scenarios with and without NPs/PAs to inform policy.

[Physician assistants and nurse practitioners: a missing component in state workforce assessments](#) Journal of Interprofessional Care, July 2011 *Athens log in required**
Due to current or predicted health workforce shortages, policy makers worldwide are addressing issues of task allocation, skill mix, and role substitution. This article presents an example of this process in the United States (US). Health workforce analysts recommend that US physician workforce planning account for the impact of physician assistants (PAs) and nurse practitioners (NPs). We examined 40 state workforce assessments in order to identify best practices for including PAs/NPs. Most assessments (about 60%) did not include PAs/NPs in provider counts, workforce projections or recommendations. Only 35%

enumerated PAs/NPs. Best practices included use of an accurate data source, such as state licensing data, and combined workforce planning for PAs, NPs, and physicians. Our findings suggest that interprofessional medical workforce planning is not the norm among the states in the US. The best practices that we identify may be instructive to states as they develop methods for assessing workforce adequacy. Our discussion of potential barriers to interprofessional workforce planning may be useful to policy makers worldwide as they confront issues related to professional boundaries and interprofessional workforce planning.

eLearning

System Workforce Planning eLearning for Healthcare
The System Workforce Planning e-learning resource has been developed by Health Education England (HEE) working across the West Midlands, in partnership with HEE e-Learning for Healthcare. It provides a practical and easy-to-use four-step process to workforce planning within a system. Tools and techniques guide you through each of the four steps with a worked-through example. The resource is aimed at anyone involved in Workforce Planning within a system, at both a strategic and operational level. STPs, Workstream leads and Commissioners can use this resource to help them identify what the purpose and objectives of the system are and what the boundaries and pathways they need to focus on. At an operational level, activities, competences, activity and productivity data, roles and location can then be determined using an activity analysis, which builds an action plan and workforce plan for the system.

Workforce Planning Tools available

- WRaPT (The process includes defining the challenge and the goal' understanding your current state; modelling your future state; implantation and support)
- Recipe for Workforce Planning (A process map with stages and documentation designed to help you workforce plan)
- GM Workforce Futures (A portal for sharing toolkits, resources and best practice to support the delivery od local workforce plans - free registration required)
- Capacity Modelling Tool (workbook designed to help you estimate additional demand that may be placed on health and social care community services)
- BEST - Baseline Emergency Staffing Tool (A workforce planning tool for use at local level in your Emergency Department to allow any disparity between nursing workload and staffing to be highlighted)
- The Calderdale Framework (Provides a clear and systematic method of reviewing skill mix and roles within a service to ensure quality and safety for patients)
- Six Steps methodology to Integrated Workforce Planning (Is a practical approach to planning that ensures you have a workforce of the right size with the right skills and competences)

Case Studies

There are several case studies as part of the WRaPT workforce planning tool.

NHS Improvement also has a suite of Best Practice in workforce planning and an example from Leeds Teaching Hospitals NHS Trust who took action to develop a workforce system

Skills for Health have a collection of workforce development case studies.

HEE Star

More resources and tools are available in the HEE Star

Statistics

You can find relevant statistics on the Health and Care Statistics Landscape

HEE National Data Programme

HEE staff can look at the National Data Warehouse (NDL) SharePoint site to find out more about datasets and Tableau products.

*Help accessing articles or papers

Where a report/ journal article or resource is freely available the link has been provided. If an NHS OpenAthens account is required this has been indicated. It has also been highlighted if only the abstract is available. If you do not have an OpenAthens account you can self-register here.

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