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Drivers of change to the skills and competences of the future health workforce in Europe

Health care services

Horizon scanning for the Joint Action on Health Workforce Planning and Forecasting has carried out research into the driving forces influencing the skills and competences of the health workforce in the EU out to 2035.

This briefing is part of a series aimed at policy makers and workforce planners across Europe; it summarises the key drivers acting on health care services and their potential skills and competence implications.

When populations interact with health care services there is a recognised trend of people expecting more information about their treatment, higher standards of care, more involvement in decisions and access to the latest treatments (Economist Intelligence Unit, 2009).

The drivers shaping health care services for the future include health care expenditures and technology effects (McGuire et al, 2012; Dybczak and Przywara, 2010), the effects of patient empowerment on system goals, Health IT and health services (European Commission, 2015), genomics and precision medicine (Mirnezami et al, 2012), changes to the location or type of care by setting and potential changes to roles and decision rights (Bohmer and Imison) and regulation (GMC, 2015).

Driving forces

Health care expenditures

The historic trend in health care expenditure has been for it to increase in absolute terms and also relative to gross national product in high- and middle-income countries (McGuire et al, 2012) - although the effects of the economic crisis may have altered that relationship, and at least in the

short term, for some European Union Member States.

Importantly, new health care technologies - defined as the 'drugs (pharmaceuticals and vaccines), medical equipment, health care procedures, supportive systems, and the administrative systems that tie all these disparate elements together (Dybczak and Przywara, 2010) - are considered to be the main component of health expenditure growth historically (McGuire et al, 2012).

Technology and expenditure

Technology represents a large source of uncertainty due to the types of treatments which may be available in the future. Looking at current trends, the distribution of health care costs may tend towards the hospital sector, and within that, towards intensive users (for example, de Meijer et al, 2012, on pharmaceutical spending growth in Dutch hospitals).

Also, there is a broad characterisation that the majority of technologies developed in the second half of the twenty-first century have extended life without reducing the overall burden of disease (Dybczak and Przywara, 2010).



However, the majority of horizon scanning respondents were optimistic about the potential of new technologies over the next 20 years, these included the potential for digitally-mediated interactions to enhance health care delivery and how innovative treatments may reduce, or shift the overall disease burden.

Health IT and health care services

Further developments in information and communication technology and their adaptations and innovations have the potential to change those aspects of health care services which can be digitally mediated, with effects on the location of where care is provided.

At the European level, the development of a digital single market (European Commission, 2015) and patients' rights in cross-border health care (Directive 2011/24/EU) combine around the flow of information contained in electronic health records. The *eHealth Action Plan 2012-2020* (European Commission, 2012) sets out commitments to move towards an interoperable eHealth system in Europe.

It will be increasingly important for workforce planners to understand how these developments may alter consumer-provider communication and the extent that they will alter the demand for health care and the associated eSkills required from health workforces.

Genomics and precision medicine

The tailoring of treatments to the specific genetic cause of a disease or health condition in an individual patient, described as 'precision medicine' (Mirnezami *et al*, 2012), allows for advances in genomics sequencing to be translated into corresponding advances in targeted diagnosis and therapy. The hoped-for outcomes include reductions of adverse events and the increased economic value of specific medicines (Weale and Clarke, 2012).

Over the course of twenty years, and depending on the scale of the insights generated, there are potentially high impacts on health services and health outcomes achieved. Also, if there are corresponding developments in genetic

prediction, the ability to describe the relative risks for individuals based on the sum of multiple genetic factors (Gibson *et al*, 2015), then there are also potentially high impacts to health care demand due to changes in when interventions may be made to specific conditions.

Location of care by setting

In terms of the education and training of health professionals, a UK review (*The shape of medical training: Securing the future of excellent patient care*) highlights that future employers will want to recruit more broadly trained individuals to work across setting boundaries.

These setting boundaries could be, for example, across hospital and community care, so that there will be an increased requirement to train for roles where there are identified changes in population needs or in service demand; or to train people in a way that is more adaptable and responsive to these changes (Greenaway, 2013).

Roles and decision rights

Mismatches between the supply and demand of health services are expected to alter the way that services are provided and also the 'roles and decision rights' of health care workforces (Bohmer and Imison, 2013) and therefore there seems likely to be ongoing developments of respective roles within inter-professional health care teams.

Regulation

As health systems and health workforces adapt to changes in demand and supply existing roles may be extended or developed whilst new roles may also be created (see, for example, Bond *et al*, 2016 for a description of the MUNROS project).

New roles may present challenges to existing regulatory frameworks whilst an ongoing challenge for workforce planning is how multi-professional models can better account for the reality of health care delivery and adapt to better understand of health care environments which are increasingly thought of in terms of teams, multi-professionalism and systems (GMC, 2015).



Skills and competence implications

Health workforce planning typically involves long timescales, for example between health workforces beginning and completing education and training programmes.

Whilst a role of workforce planners is to consider the aggregate effects of these driving forces on their health workforces over long timescales here we consider some of the skills and competence implications that emerged from the horizon scanning exercise.

Overview

- ▶ Connected health workforces may alter the nature of team working and associated skills.
- ▶ Rising levels of information at the individual level creates demand for increased statistical and research skills.
- ▶ Technological developments and their uptake enhance clinical and non-clinical practices.

Skills and competence implications

Increases in the following areas of competence and skills and competence were identified as part of horizon scanning.

Information interpretation skills resulting from developments in eHealth may increasingly have wide ranging impacts on patients, the workforce and health systems (EFN, 2014).

Certain sections of the workforce may be faced with an increasing amount and depth of data to manage, and also increasingly with questions concerning how to reliably analyse and make decisions with potentially conflicting aspects.

Decision support applications and statistical techniques are likely to be part of the toolset used by increasing sections of the workforce.

Information, such as broader quantified data on people's lifestyles, will need to be considered as

part of information accessed by the workforce alongside clinical assessments and other electronic patient records.

This seems likely to drive changes in working practices as well as the skills needed by certain workforces to obtain, assess and interpret data. These changes may also have effects on productivity if barriers of sharing and accessing information are reduced - so long as there is the infrastructure and capability to ensure the safety of information.

Depending on the extent to which the potential of 'precision' medicine is realised in the future - and informed by new findings that prevalent diseases such as diabetes and cancer are more distinct at the molecular level than first thought (Genomics England, 2015) - the opportunity to screen, tailor and predict how each patient will respond to certain treatments is increasingly being realised.

Skills and competence in these areas may then be an area of growth over the next 20 years. An awareness of, and **detailed genetic assessment and treatment skills**, will be an important for the workforces involved in assessment, diagnosis and treatment.

The scope of workforces may also expand to new genetic advisory and therapy health professionals as part of multi-disciplinary teams. Workforces may need to be increasingly technologically literate accessing Continuous Professional Development (CPD) and adopting lifelong learning strategies.

They will also need to become an interpreter and critical thinker alongside patients looking at what different data, information and decision support technologies are advisable.

Use of technology and its adoption as part of care delivery from a physical and remote perspective such as eHealth, surgical robots and other enhancements amending clinical and non-clinical practices



Workforce planning, education and training considerations and workforce examples from horizon scanning

<p>Examples of possible impacts to the workforce as shared by respondents</p>	<ul style="list-style-type: none"> ▶ All workforces may see telehealth enhance roles, especially community-based assistant practitioners, GPs and pharmacists who may work together with patients in hub and spoke models respectively. ▶ All workforces will have to possess flexible healthcare skills (and new roles may also be identified) to allow them to enter and exit multiple inter-professional teams as required. ▶ All workforces may be enabled by technology to have greater opportunities to promote health and wellbeing through more integrated approaches which may require a redesign of skills and working using, for example, eHealth. ▶ All workforces seem likely to see technology enabled patient-led developments in self-care and self-management. This might result in an increase in focus on compliance as well as the technology to monitor compliance to treatment or medications in line with patients' treatment goals. ▶ All workforces seem likely to require enhanced ICT and research skills to deal with the increasing flow of information. The workforce may not need to be researchers per se but adept at interpreting research and then advising patients as best as possible. ▶ All workforces may be affected by online consultations or developments in remote aspects of care. ▶ All workforces may see an increase in specialisation and more sub-specialisation in the future as a result of greater information and data. This may require a complex mix of generalists and sub-specialists for the future as part of multi-disciplinary teams across differing geographies. ▶ All workforces may see increased requirements for monitoring. If, enabled by more data and technology advances, specialisation increases, there will be an increase in requirement for skills in having overall and health systems management to identify and enable to the most efficient configurations of new types of services in conjunction with technologies. ▶ Doctors may see that the clinical skills of the physician will be accentuated by genomics and technology innovations enabling a focus change from care to cure for some areas of disease. ▶ Doctors may see the focus of the role move towards how large volumes of data can be amalgamated to create an accurate picture of the patient's individual circumstances, and create a treatment that is 'personalised.'
<p>Education and training considerations</p>	<ul style="list-style-type: none"> ▶ Certain health professionals will need education, training and awareness of risk stratification, precision medicine and genomics techniques and their impact to their practice. ▶ Awareness of and use of differing technologies will be needed for existing and new workforces in order to adapt to demands from patients. There may be a generational gap present in much of the workforce when using present technologies which may be apparent as rapid changes are introduced. ▶ Educational models may face rapid change to respond to new requirements of a very different education and training consumer than the traditional institutions have been faced with before. More remote learning may be enabled by technology, skills development and interactivity. However it will be important



	<p>not to lose the physical teaching and learning that provide good educational outcomes.</p> <ul style="list-style-type: none"> ▶ Curricula will require frequent updating to cover the implications of technology aspects such as increased remote contact with patients, and specific training in remote consultations and monitoring in different contexts. ▶ Decision making in health care (already a topic for CPD) will be increasingly complex with more data and information to hand. The existing and new workforce will need to learn how to apply new research, and for example learn how to follow and implement new algorithms and protocols.
<p>Workforce planning considerations</p>	<ul style="list-style-type: none"> ▶ Technology may help realise opportunities to improve productivity or manage expected increases in demand from the population. Workforce planning will need to assess the impact and outcomes of technology and likely changes in ways of working and the implications to supply and demand for health workforce. This will require eliciting future need, demand and supply in light of use of technology and its future impact to ways of working. ▶ New technological skills may emerge at pace and there will be a requirement for planning where skills are needed, whether these are hybrid roles or reflect changes to professions. Workforce planning will continue to focus on the time taken to produce new areas of workforce supply and what policy actions are required for short, medium and long term provision.

Key references

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Full report and references available at www.healthworkforce.eu



Funded by the Health Programme of the European Union

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