NHS

Health Education England

Framework 15

Health Education England

Strategic Framework

2014 -2029

Updated February 2017

THE NHS
CONSTITUTION
the NHS belongs to us all

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FIVE YEAR FORWARD VIEW

'Health care depends on people — nurses, porters consultants and receptionists, scientists and therapists and many others. We can design innovative new care models, but they simply won't become a reality unless we have a workforce with the right numbers, skills, values and behaviours to deliver it.'

Five Year Forward View - CQC, HEE, Monitor, NHS England, PHE, TDA (October 2014)

'Health is all about people. Beyond the glittering surface of modern technology, the core space of every healthcare system is occupied by the unique encounter between one set of people who need services and another who have been entrusted to deliver them. This trust is earned through a special blend of technical competence and service orientation, steered by ethical commitment and social accountability, which forms the essence of professional work. Developing such a blend requires a lengthy period of education and a substantial investment of both student and society. Through a chain of events flowing from effective learning to high-quality services to improved health, professional education at its best makes an essential contribution to the wellbeing of individuals, families and communities.'

'Health professionals for a new century.' The Lancet (2010)

Who are we?

Health Education England (HEE) exists for one reason only: to support the delivery of excellent healthcare and health improvement to the patients and public of England by ensuring that the workforce of today and tomorrow has the right numbers, skills, values and behaviours, at the right time and in the right place.

Click to play
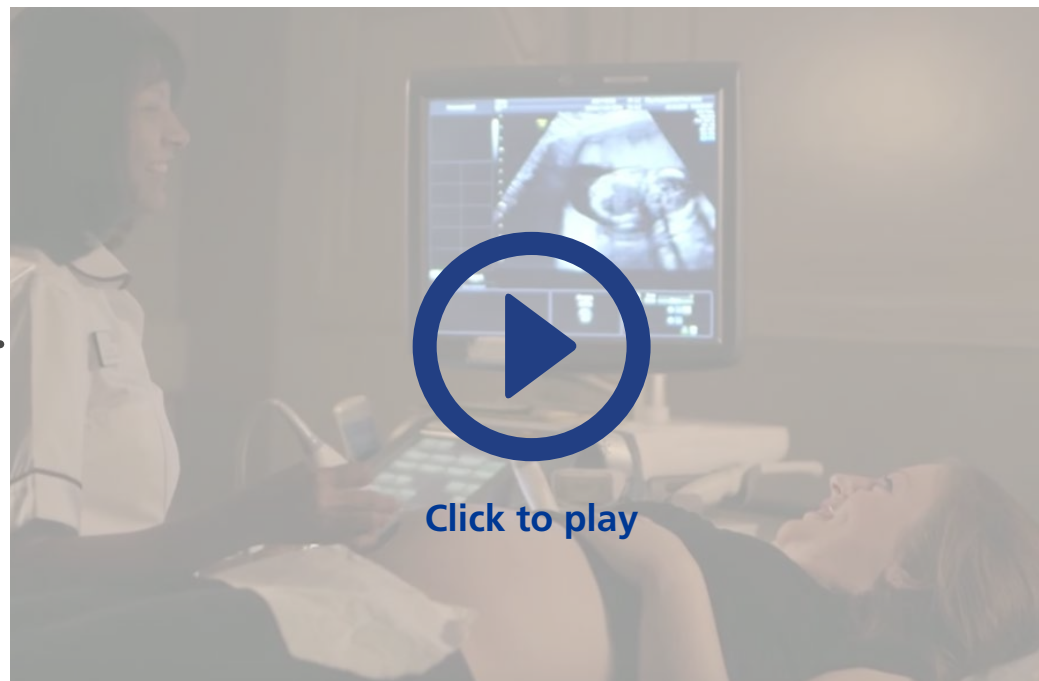
There are different views on the terminology that should be used, but in general where we use the terms 'people' and 'patients', this would also include 'citizens', 'individuals', 'clients' and the 'public'. Depending on context it would also include their carers and wider communities.

What we do and why

HEE is not the only body concerned with the education and training of healthcare staff. The regulators have an important part to play, as do providers who are ultimately responsible for employing, maintaining and developing their staff and the quality of care they provide. HEE serves the wider healthcare system (including private and third sector providers) but has no remit over social care. With the addition of the Leadership Academy, HEE now has six levers that we use to achieve our shared purpose of improving the quality of patient care:

Workforce planning: each year we identify the numbers, skills, values and behaviours that employers tell us they need for the future.

Attracting and recruiting the right people to the education and training programmes we plan to commission: using mechanisms such as Health Careers, Oriel and Come back.

Workforce Transformation: Supporting the work of Local Workforce Action Boards in workforce transformation activities.

Commissioning excellent education and training programmes for medical students: using our commissioning levers to best effect so that medical students can learn to provide safe, high-quality care for patients.

Lifelong investment in people: encouraging employers to continue to provide high-quality care for patients through on-going training.

Leadership Academy Developing better leaders, delivering better care: To develop outstanding leadership in health, in order to improve people's health and their experiences of the NHS.

5

Why are we producing a 15 year strategic framework?

Success =

When a person turns to the NHS for help, their needs are met by people with the right numbers, skills, values and behaviours to provide high-quality care.

Historically HEE has invested approximately £5 billion every year in education and training programmes for the current and future workforce. In future years this will reduce to just under £4 billion as a result of changes introduced by the 2015 comprehensive spending review (CSR). HEE will retain responsibility for clinical placement funding for the affected areas. To achieve the required level of expertise, professional training can take more than a decade in the NHS.

Those who get the student places we have commissioned this year will still be working as healthcare professionals until 2060 and beyond. Therefore, every time we make an investment in a training place, we are making an expensive set of assumptions about future healthcare needs and how best to meet them. If our assumptions and investments are very wrong, then this could contribute to:

an under-supply in some areas of the workforce, with negative consequences for the care we are able to offer patients and their families, or

an over-supply, resulting in a highly-skilled unemployed workforce and a wasted opportunity to invest public money elsewhere in the NHS, or

the wrong set of skills in the wrong place, locking the service into particular models of delivery that may not be appropriate for the needs of future patients.

'Framework 15' will guide the investments, decisions and actions the healthcare system will take in the short, medium and longer term to improve our chances of success.

Who is Framework 15 for?

Currently HEE invests several £billion every year (see p6) in education and training programmes for the current and future workforce.

Our strategic framework is primarily intended as a framework for thinking about the future and a guide to inform the investment and disinvestment decisions by those tasked with planning, educating and training the future workforce.

We recognise that the workforce is integral to the way that healthcare is provided both now and in the future, so we have chosen to set out in one place our planning assumptions, so that others can let us know if they think we have got it wrong and work with us to address longer term challenges and achieve shared goals.

Better patient care will only be delivered by co-operation and partnership across the system, because workforce strategy is intimately connected with decisions about service configuration, models of care, quality and cost. By sharing our current thinking, we will promote not just more discussion and debate about strategy, but better decisions and thereby better patient care.

Our strategic framework will:

- Provide the conceptual framework for how HEE approaches problems and identifies solutions, ensuring our focus remains on the patient.
- Guide the decisions we make in the short term, such as the annual workforce planning process and the priorities in our Business Plan.
- Inform our longer-term work programme, our work on Workforce Transformation, for example in the support of the development of new roles, through the Transformation Delivery Group (TDG).
- Enable our board and the public to assess our actions against our expressed strategic ambitions, and to challenge us if we veer off course.
- Continue to provide the basis for more detailed conversations with our partners and stakeholders about the challenges ahead, supporting the achievement of the ambitions set out in the Five Year Forward View and beyond.

We invite further feedback and comment, and in this document we are again committing to refreshing our Strategic Framework at least once every year.

Please send any comments to HEE.StrategicFramework@nhs.net

How did we develop Framework 15?

Because no-one can be certain of the future, HEE has worked with our partners and stakeholders to gain a better understanding of the challenges ahead taking a 15 year view forward into the future. We began this process by publishing Health Education England: Our Strategic Intent (February 2013), building on 118 responses to our Call for Evidence (CfE) for our Strategic Intent Document (SID).
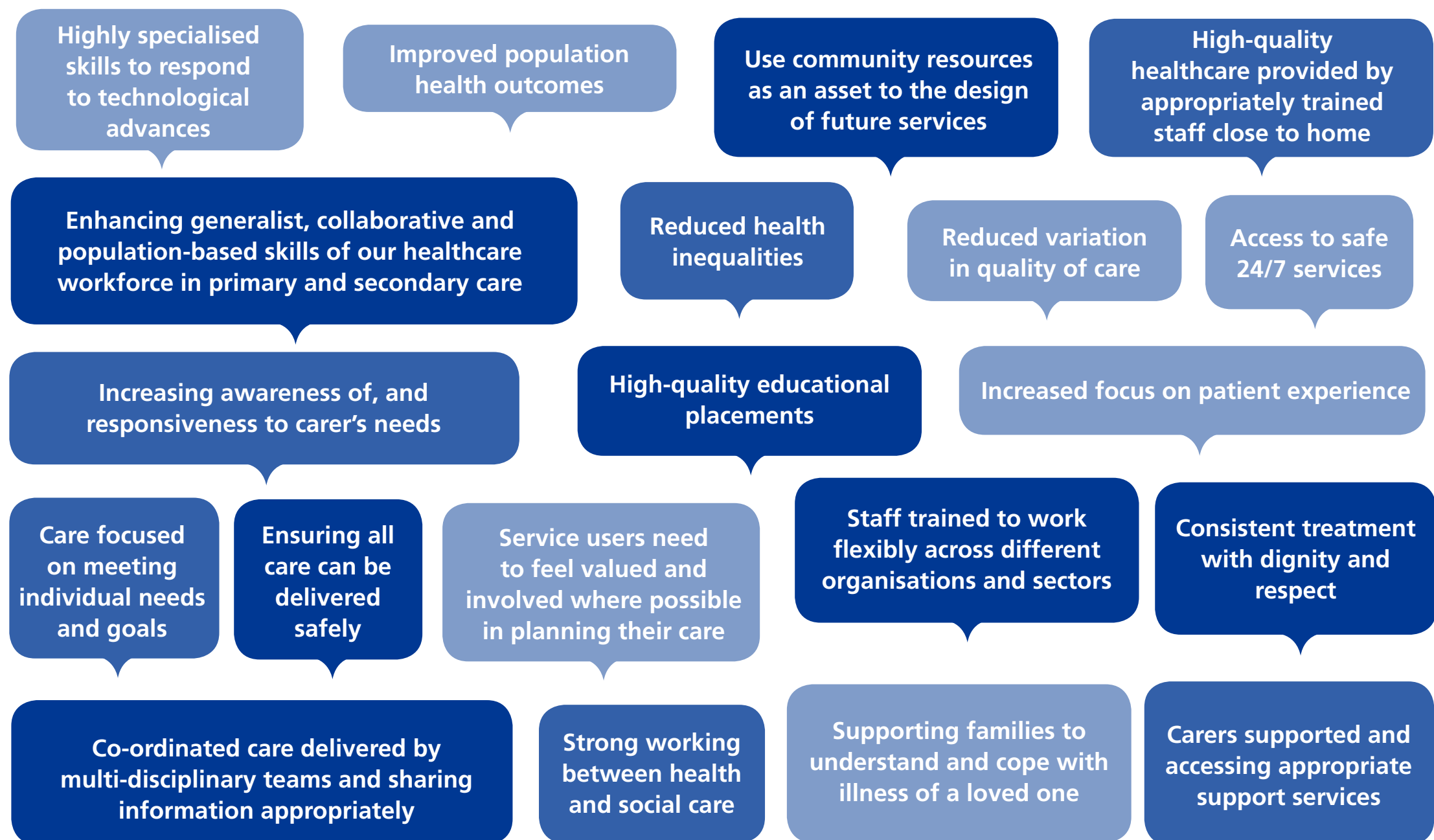
Framework 15 sets out our ambitions for 15 years. We will continue to use it as a basis for our own decisions and actions, but will, in parallel, debate and discuss the assumptions and conclusions within it, so that as the evidence changes, we will continue to amend our assumptions and plans where appropriate. Reviews of evidence to date have demonstrated ongoing support for the core messages of F15, but we are committed to keeping this under review, working with our stakeholders to develop a workforce that can meet the needs of both current and future patients.

All facts stated in this document can be accessed with their references in the factsheet here.
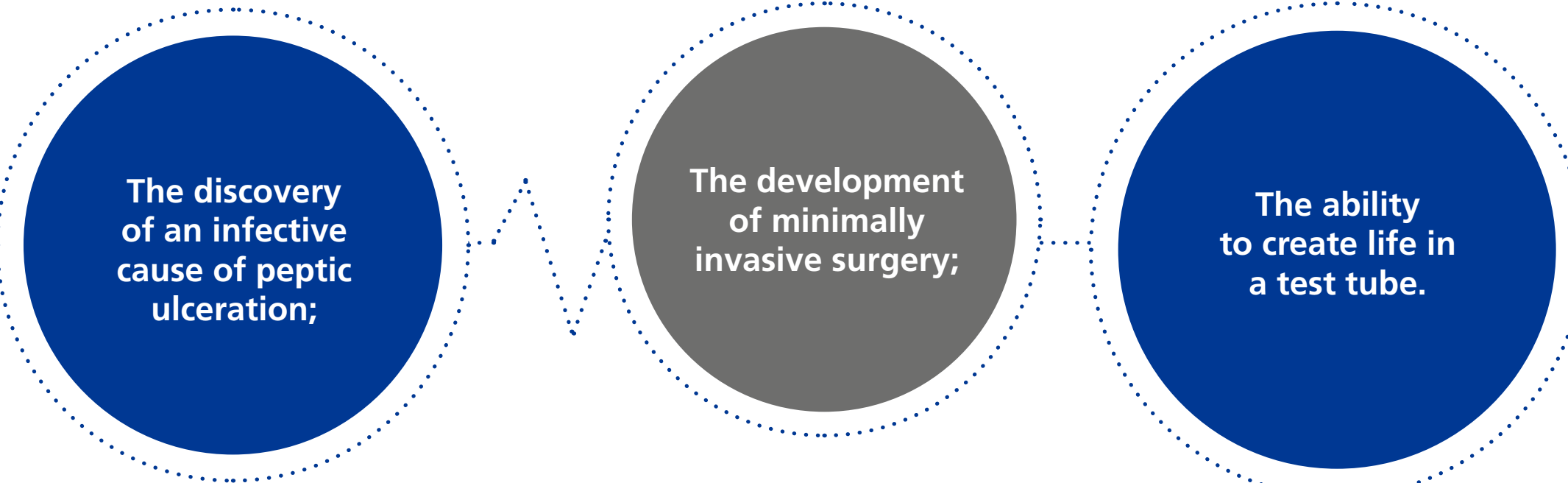
A glossary of terms is available here.

Stakeholder responses to 'Introducing Health Education England: Our Strategic Intent'

Highly specialised skills to respond to technological advances

Improved population health outcomes

Use community resources as an asset to the design of future services

High-quality healthcare provided by appropriately trained staff close to home

Enhancing generalist, collaborative and population-based skills of our healthcare workforce in primary and secondary care

Reduced health inequalities

Reduced variation in quality of care

Access to safe 24/7 services

Increasing awareness of, and responsiveness to carer's needs

High-quality educational placements

Increased focus on patient experience

Care focused on meeting individual needs and goals

Ensuring all care can be delivered safely

Service users need to feel valued and involved where possible in planning their care

Staff trained to work flexibly across different organisations and sectors

Consistent treatment with dignity and respect

Co-ordinated care delivered by multi-disciplinary teams and sharing information appropriately

Strong working between health and social care

Supporting families to understand and cope with illness of a loved one

Carers supported and accessing appropriate support services

Planning for an uncertain future

Healthcare is subject to disruption and we must actively plan for uncertainty. Examples include:

The discovery of an infective cause of peptic ulceration;

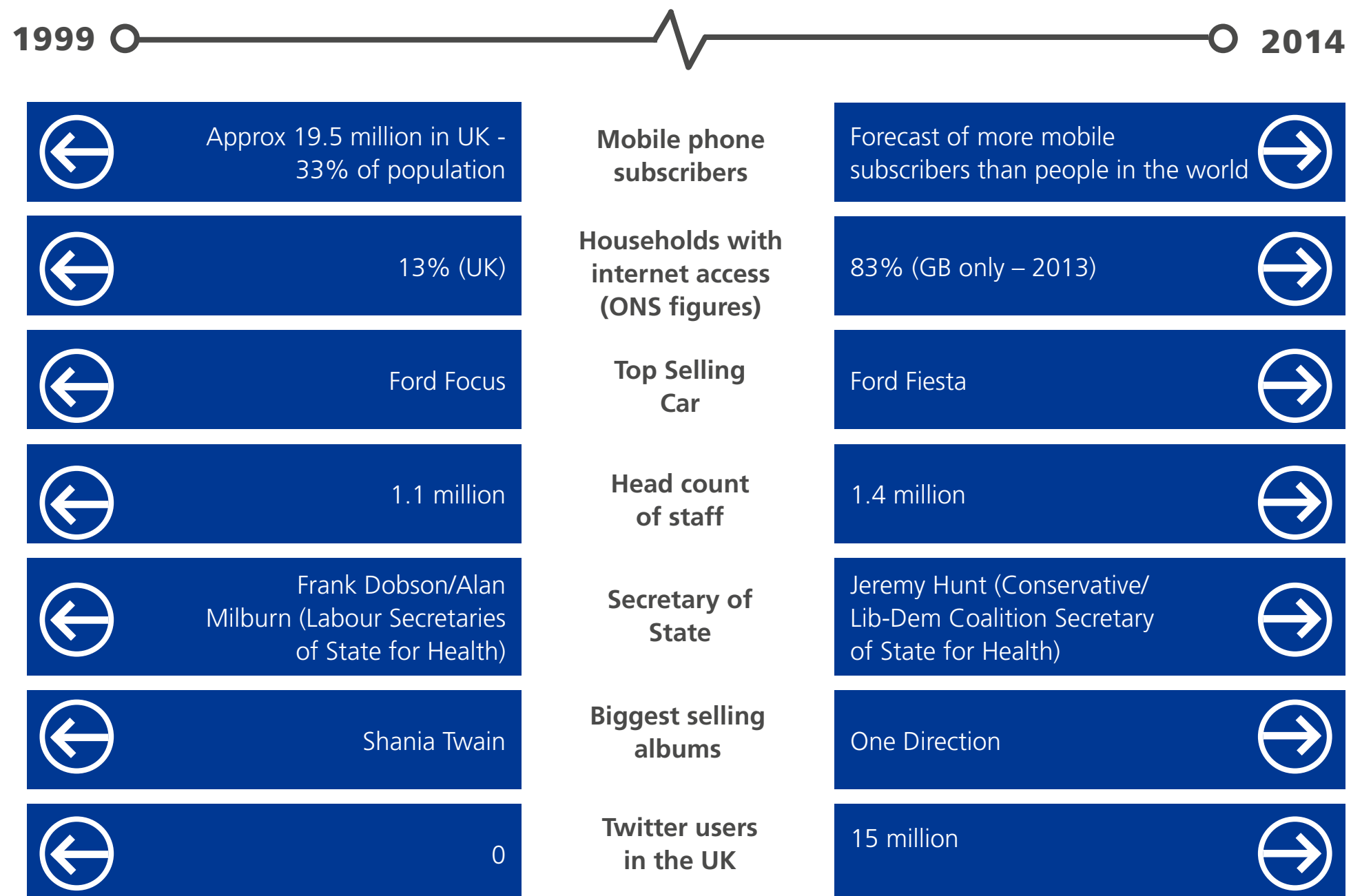**The development of minimally invasive surgery;**

The ability to create life in a test tube.

Often, the best guide for what may happen in the future is to look at the past: the predictions that were never realised or had an impact different from that anticipated. So, before we look forward 15 years, it is worth looking back at what has and has not changed since 1999.

'The only thing we know about the future is that it will be different.'

Peter Drucker

1999 - 2014 : Then and Now

1999 ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯〰⎯⎯⎯⎯⎯⎯⎯⎯⎯ **2014**

1999		2014
Approx 19.5 million in UK - 33% of population	**Mobile phone subscribers**	Forecast of more mobile subscribers than people in the world
13% (UK)	**Households with internet access (ONS figures)**	83% (GB only – 2013)
Ford Focus	**Top Selling Car**	Ford Fiesta
1.1 million	**Head count of staff**	1.4 million
Frank Dobson/Alan Milburn (Labour Secretaries of State for Health)	**Secretary of State**	Jeremy Hunt (Conservative/ Lib-Dem Coalition Secretary of State for Health)
Shania Twain	**Biggest selling albums**	One Direction
0	**Twitter users in the UK**	15 million

The NHS in 1999

NHS Executive (part of Department of Health) with **two main offices** (London and Leeds) and **eight regional offices**.

There were **99 Health Authorities** across England.

'GP fundholding' abolished in 1999 and Primary Care Groups established.

NHS Trusts, **NHS Ambulance Trusts** were already in existence and **NHS Direct** established.

The government published **'Saving lives: our healthier nation'** and set targets in priority areas.

1999 Health Committee report: **'Future NHS staffing requirements'**.

National Institute for Clinical Excellence **(NICE)** starts its work.

Significant concern expressed that areas of the NHS may be affected by the year **2000 ('millennium') bug**, and legal experts warn that NHS trust bosses could be open to manslaughter charges if computer chips (such as those embedded in life support systems) fail and cause fatalities.
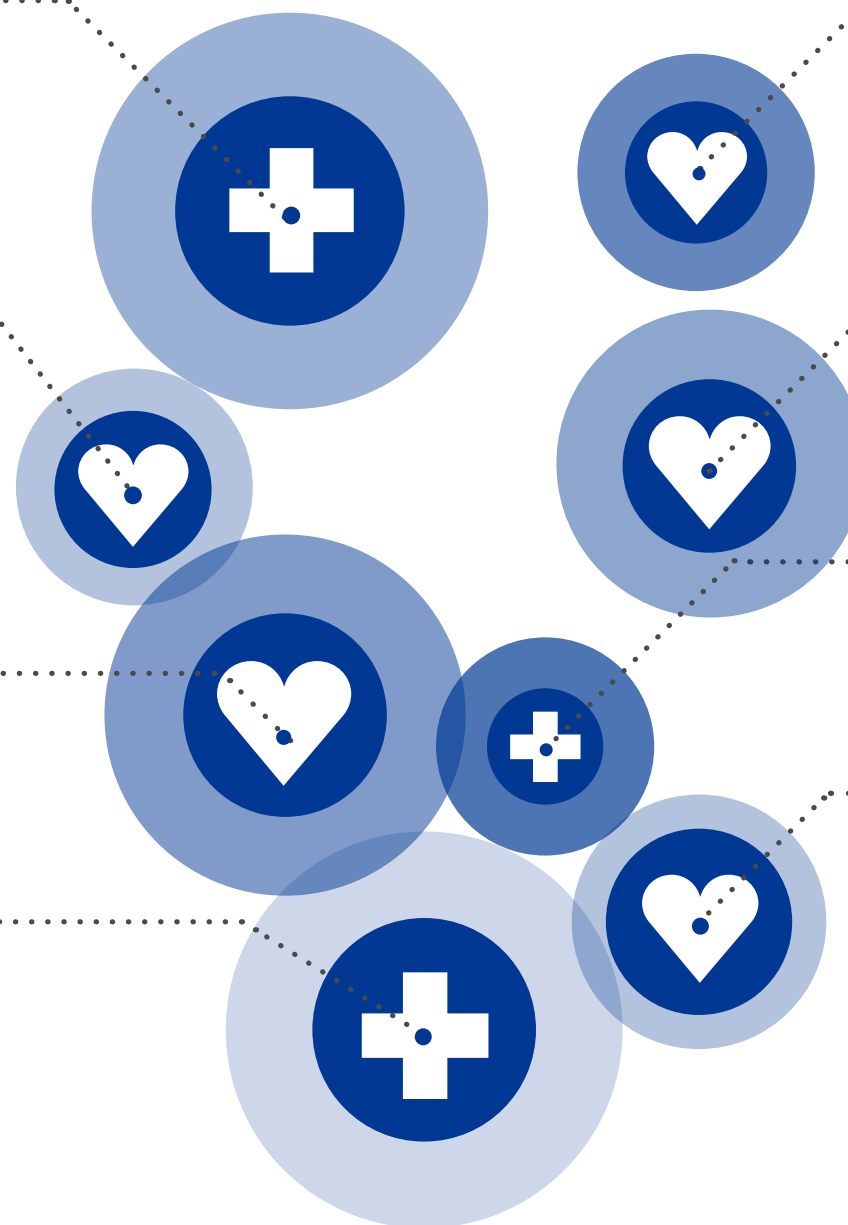
Nuffield Trust predictions in 1999

In the 1990s, the Nuffield Trust established a Policy and Evaluation Advisory Group (PEAG) and published a series of predictions 1999 looking forward to 2015.

Nuffield predicted in 1999	What happened
Greater concentration of specialist expertise and equipment	There is a greater consensus that this is necessary and NHS England retain this as one of their recently published ambitions. However, it remains controversial and difficult to implement locally. Particular examples of where specialist services have been centralised include the creation of specialist stroke centres (over half of all patients now suffering from a stroke are admitted to a specialist centre).
Growing importance of self-diagnosis and treatment	There has been a huge growth in the availability of self-screening kits (kits are now available to test for cholesterol, bowel cancer, prostate cancer and diabetes amongst others). There has also been a huge growth in the number of people using the internet for health purposes. In 2016, 51% used it for health related information. However, there is little evidence of transformed pathways of care as a result: many self-screening kits are used as a prompt for a person to access existing services, rather than tools for self-diagnosis and care.
Greater number of common conditions treated locally linked telemetrically to specialist centres	This is technologically possible and is happening in some areas, but not systematically or at scale. There have been numerous trials based around telehealth, some suggesting that they may lead to a 20% reduction in A&E attendance, with a cost saving of over approximately £188 per year for each patient involved in the trial – but this has yet to be realised at scale.
Capacity for screening and treating serious disease will be more widespread	The use of health checks has been introduced and continues to grow although take up is still relatively low. In 2015/16, of over 15 million people eligible for a health check, only 18.8% were offered one and less than half of those offered a check took up the option.

15 years through the eyes of Tom

TOM BORN 11TH FEB 1999

Born via Caesarean section as breech.

Home birth was not routinely offered as an option.

Life expectancy at birth approximately 75 years.

His parents were told that in their hospital they were not able to know his gender until he was born.

Many shops closed on Sundays.

Mother took coins to call family and friends from phone-box - no mobile phone.

Tom received 150 birthday cards through the letter box.

Tom's Dad is a newly qualified paramedic who delivers life support whilst transferring people to hospital.

TOM AT AGE 15 IN 2014

Tom's life expectancy is 79.

Tom uses an app to monitor his sleep and to wake him up at the optimum time.

Tom plays online games and talks to people from across the world from his bedroom.

Through using social media he knows instantly what's happening in the world – without waiting for the 6pm news.

Has a mobile phone and access to over 40 TV channels and 24/7 access to shopping outlets from all over the world.

On his birthday Tom received 100 social media messages.

Tom has been given an iPad by school to revise for GCSEs and increasingly relies on technology to manage his social life.

Tom's Dad is a Paramedic Practitioner who treats people on the scene but still takes 50% of people to hospital. His emergency ambulance carries a full range of equipment, including electrocardiogram (ECG) machines to monitor a patient's heart and defibrillators, which can restart the heart if a patient goes in to cardiac arrest.

TOM AT AGED 30 IN 2029

Tom's children's life expectancy could be over 100 years and his grandchildren's life expectancy may be over 150 years.

Tom and his family all have personalised genetic profiles and health and wellbeing plans.

Tom manages his own healthcare record, choosing what to share and with whom.

Tom supports his mother to manage her long-term condition (LTC) remotely, cross checking her vital signs and monitoring her medication compliance.

Tom is now a paramedic who has triage skills and full access to the most up-to-date technology to deliver effective care on the scene avoiding admissions to hospital where appropriate.

Our strategic framework

So if it is so difficult to plan for an uncertain future, how we can we increase our chances of success?
HEE has made six strategic assumptions that underpin Framework 15

We need a workforce fit for the future, able to meet the needs of patients of today and tomorrow.

The future is necessarily uncertain, and we should therefore plan for uncertainty.

The workforce is both a key enabler and a driver of change in health, and must be integral to all future planning and investment decisions if the opportunities to improve care are to be realised.

If we maintain current approaches to investment and training, we will perpetuate current models of care.

Our best chance of success is to base our long-term workforce strategy primarily on the anticipated needs of future patients, rather than just stated service visions, which may or may not come to fruition.

The distinction between the present and the future is a false one in health: today's workforce will be working ten, twenty, thirty years from now, and have a duty to serve both the patients of today and tomorrow.

The three pillars of Framework 15

These assumptions have led us to a strategic framework based on three pillars:

Our understanding of the key drivers of change in health and healthcare, based upon a review of international evidence.

Our judgement of the impact these drivers are likely to have on people and patients of the future, and how this will shape their characteristics and needs.

Our view of the characteristics of the future workforce that will be needed in order to meet the anticipated needs of people and patients.

We recognise that effective delivery will require whole system working. We will, therefore, work closely with commissioners and employers - locally and nationally - to understand their current and future priorities and workforce needs, and to ensure alignment of purpose and objectives.

You can find out more about the planning process for the Five Year Forward View here; and about Public Health England's priorities here.

HEE's 15 year framework for health and care

Individuals at different
starting points

Global drivers
of change

Future patients

Future workforce

Demographics / Population profiles

Technology & innovation

Social, Political, Economic & Environmental

Current & Future service models

Expectations (people & staff)

ON THE UP

ON THE UP

ON THE UP

Multiple & complex conditions

Informed, engaged & active

Members of communitites of health

The 'workforce' will include the informal support that helps people prevent ill health and health and manage their own care when appropriate.

Will have the skills, values and behaviours required to provide co-productive and traditional models of care as appropriate.

Will have adaptable skills responsive to evidence and innovation to enable 'whole person' care, with specialisation driven by patient rather than professional needs.

Will have the skills, values, behaviours and support to provide safe, high-quality care wherever and whenever the patient is, at all times and in all settings.

Delivering the NHS Constitution: 'Will be able to bring the highest levels of knowledge and skill at times of basic human need when care and compassion are what matters most.'

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Part 1

Global drivers of change

Introduction

In order to plan for an uncertain future, successful industries identify the 'drivers of change' or the forces and trends that are likely to have the most significant impact on their business. This helps to envisage future scenarios and manage evolving change.

We have identified five key drivers of change that we believe will shape the needs of future people and patients, and which, in turn, will drive and shape the nature of the demand placed upon the health and social care service. Because our timeframe is 15 years, we have researched not just domestic but global drivers of change, recognising that flows of information and people over time transcend national boundaries, and that some of the high-impact changes will be driven by factors that are common across the world.

The following sections examine each of these five drivers individually, but they are all interconnected such that a change in one will likely impact on the others.

The five global drivers of change
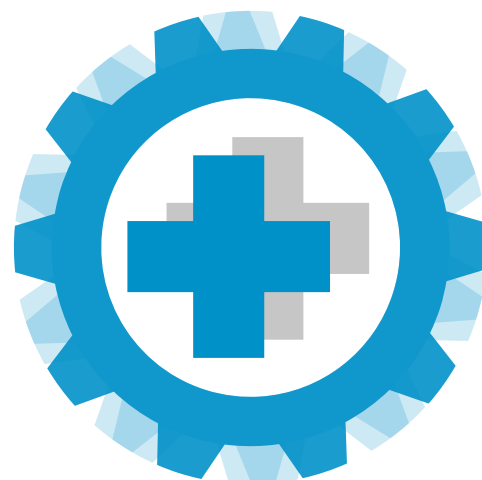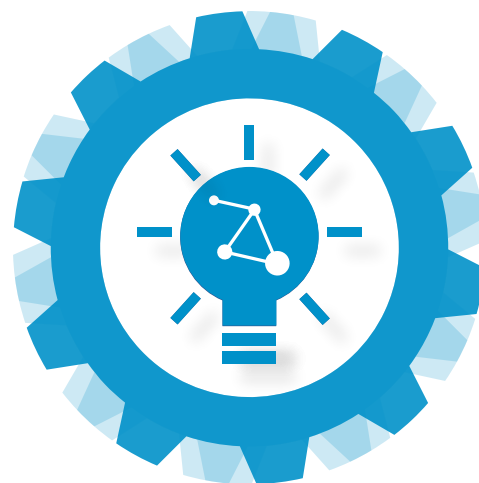
Demographics

The NHS is a service used by people, provided by people and funded by people, so it follows that one of the most significant drivers of change in the future will be changes in the population as a whole. Demographics are the quantifiable statistics of any given population, including: gender, age, ethnicity, disease burden and lifestyle patterns. For the purposes of our workforce strategy, we need to consider how any demographic changes will impact not just on demand (patients) but supply (staff).

Patients (demand)

What will be the significant demographic changes in the population as a whole? How will that impact upon patients and their needs?

Staff (supply)
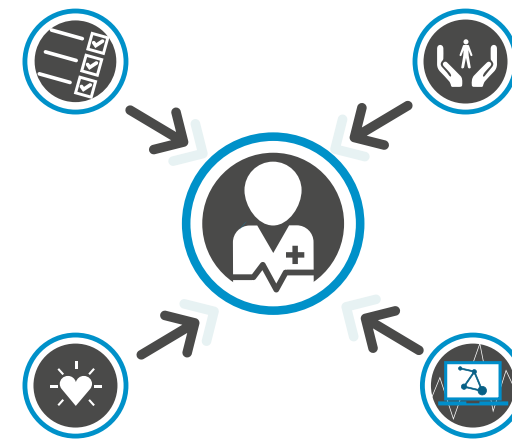
What will be the significant demographic changes in the workforce? How will this impact upon their ability to meet the needs of future patients?

'Many organisations may struggle to visualise a view longer than 10 years but planning for success into the longer term (20-30 years) is important to meet the predicted healthcare needs of a changing demography.'

Demand

There will be more of us.

There will be more elderly people.
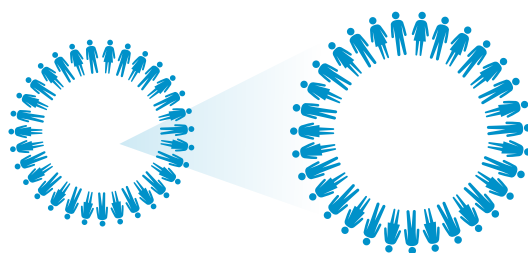
Past and Present

The older population continues to grow, with over 11.6 million (17.8% of the population) aged 65 and over and 1.5 million (2.3% of the population) aged 85 and over in mid-2015.

Since mid-2005, the UK population aged 65 and over has increased by 21%, and the population aged 85 and over has increased by 31%. The number of males aged 85 and over has increased by 54% since mid-2005, compared to a 21% increase for females.

UK population grew by 15.5% between 1981 and 2015.

Past and Present

The percentage of the population in the UK that is over 85 has more than doubled in the past three decades from 1.1% of the population in 1981 to 2.3% in 2014.

Future Trends

The UK population is projected to grow by approximately 10% to 71 million between 2014 and 2029.

Future Trends

The number of people aged over 85 in the UK is projected to increase to 3.6 million by 2039 and the number of centenarians is projected to rise nearly 6 fold, from 14,000 at mid-2014 to 83,000 at mid-2039. This increase in the numbers of older people means that by mid-2039 more than 1 in 12 of the population is projected to be aged 80 or over.

Demand

We will live longer.

Leading to greater volume of care needs.
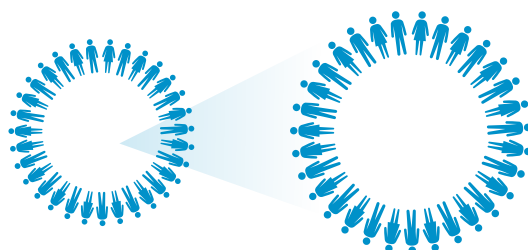
Past and Present

When the NHS was founded in 1948, 48% of people died before the age of 65. In 2014, only 14% died before 65. Average UK life expectancy is now 79 years for males and 83 years for females.

Future Trends

At least one third of babies born today are expected to live to see 100. The first 150-year-old has almost certainly been born.

By 2039 over 1 in 12 of the population will be over the age of 80.

Past and Present

In 2010, there were 2.5 million people over 65 with care needs.

Future Trends

According to one estimate there will be over a million additional people receiving unpaid care over the 2015-2035 period.

Supply

The workforce has grown overall.

More women have entered the medical workforce.
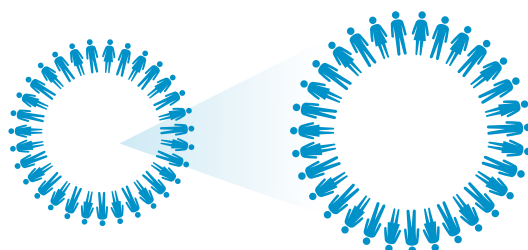
Past and Present

In 1948 the NHS employed 144,000 members of staff. The NHS in England currently employs around 1.3 million* staff in over 300 different organisations. In the decade to 2014 the consultant medical workforce grew by 44%.
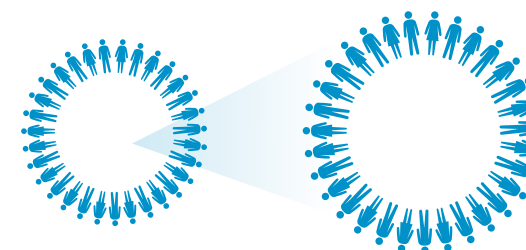
Past and Present

In 2014 female GPs outnumbered male GPs for the first time and increased from 47% in 2011 to 52% in 2015.

Future Trends

Our 2016/17 Workforce Plan identifies 50,000 doctors and dentists as currently being in training with over 38,000 new training opportunities being put in place for nurses, scientists and therapists.

Future Trends

Although there may be some evidence that the increases in the numbers of women joining the medical profession is beginning to slow, the number of women joining UK medical schools still continues to outnumber men. Recent figures show that, in 2014, 55% of medical students were female (although this has reduced from a peak of 61% in 2003). 57% of all doctors in training are female.

*the figure of 1.3 million is quoted on a number of occasions in the document and refers to the Headcount of staff.

The workforce is getting older.

Consequently patterns of working are changing.
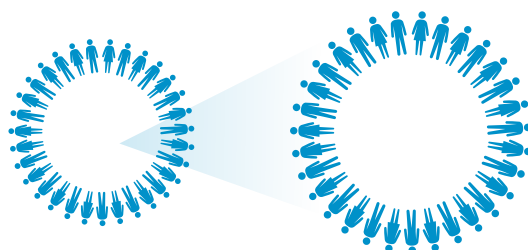
Past and Present

The average age at which nursing students currently register is approximately 29 compared with just 20 in the 1960s. 41% of community nurses, health visitors and district nurses are over 50 years old. In 2015, 48% of the nursing workforce was aged 45 or older,compared to 38% in 2010.
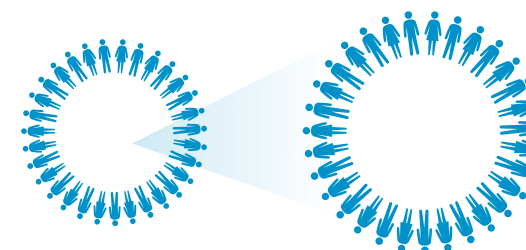
Past and Present

Research shows that fewer than 30% of NHS employees in the UK are part-time until the age of 55, but this increases rapidly thereafter to 50% by age 60.

Over a third of people who are aged over 50 would like to either reduce their hours or undertake flexible working.

Future Trends

The average age of the NHS workforce is now 43 and is projected to increase further in the future.

Future Trends

As the workforce gets older the proportion of part time workers may increase, depending on other economic factors. Across the wider economy, women aged over 60 and men aged over 65 are more likely to work part time, rather than full time.

Example of supply challenge: international flows

The NMC records verifications issued to other countries which gives an indication of the outflow of registered nurses compared to inflow from new registrants. Figure 6 shows that the inflow has been higher than outflow since 2013/14. Of the 4,866 verifications issued in 2015/16, two fifths (46%) were issued to Australia, 20% to the USA, 10% to Ireland and 6% to New Zealand.

Inflow and outflow of nurse and midwives from the UK (1995/6–2015/6)

Source: Nursing and Midwifery Council

Taken from: RCN, Unheeded warning: health care in crisis: the UK nursing labour market review, 2016, p10

INFLOW   **OUTFLOW**
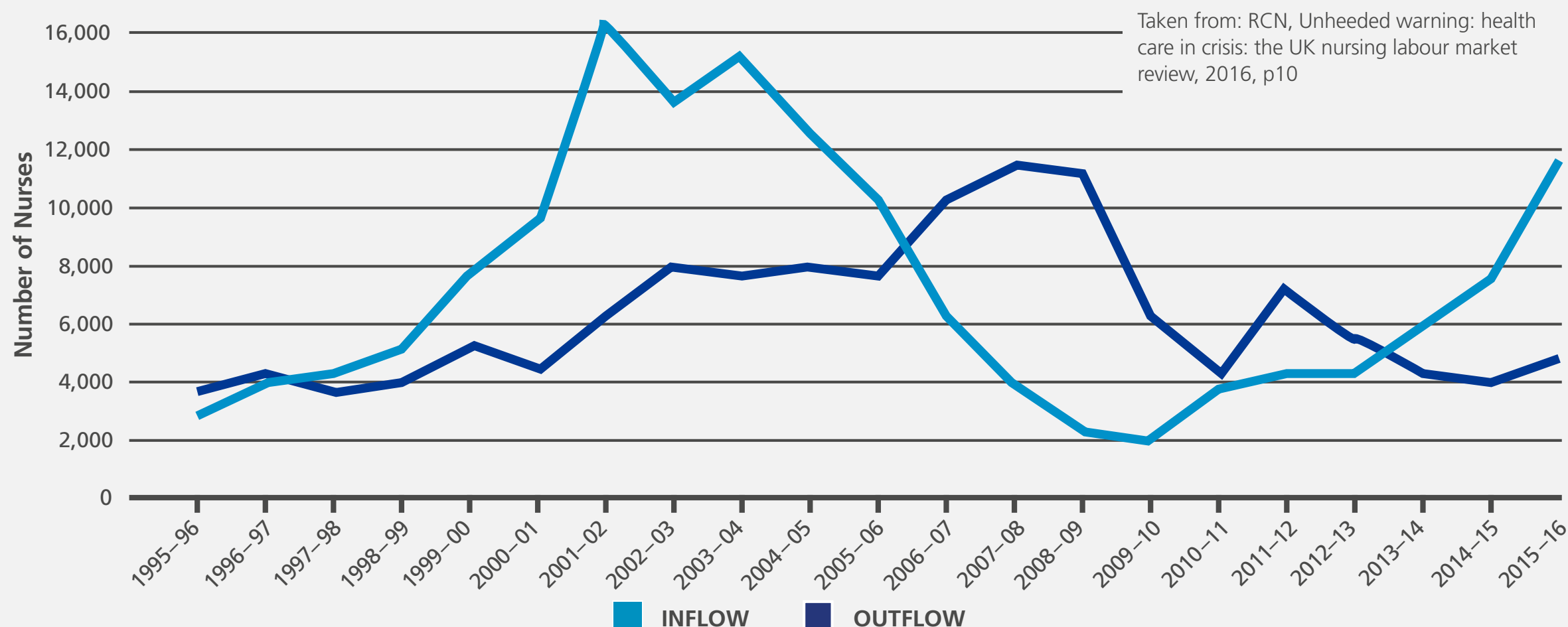
The challenges

Health Education England needs to plan for a future workforce in sufficient numbers, with the right skills and behaviours. Regardless of any changes in patterns of disease, the projected demographic changes in volume alone, (overall population growth, the numbers of elderly people, the aging workforce and increase in part-time workers in the NHS) raises significant challenges that we will need to address:

According to one projection, a significant increase in demand for the work of the paid and voluntary and unpaid workforce across the whole health, social care and public health system could be anticipated through to 2035. Most of the demand for which is likely to be for skills which would fall into the unpaid, voluntary and unregistered workforce categories.

If the population is...

growing at a rate of 10%, with an increase in elderly people leading to increasing care needs...

And staff profiles are...

changing, with more women and older people leading to rising part-time working and retirement issues...
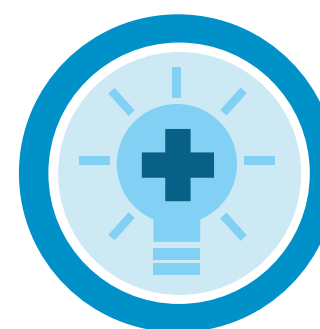
Do we...

- have enough numbers of staff with the care and compassion to deal with the increase in care needs for older people?
- have staff who are willing and able to work in all settings and at all times?

Technology and innovation

Medical innovation and discovery, from the ancient beginnings of 'rational medicine' through the development of antibiotics and organ transplantation to medical imaging and human genome sequencing have transformed our ability to diagnose and treat disease, saving and improving the lives of countless patients and their families. Further progress is anticipated in science and health, which whilst vital is not the prime focus of this report. Instead, we highlight the extent to which technology and innovation in other fields will increasingly disrupt the way that patients and staff perceive, understand and manage health and ill-health in the future.

'Patients in the NHS are now receiving personalised care based on their DNA code. Two families have been diagnosed with rare conditions as part of a project at Newcastle Hospitals and University that used an analysis of their genomes – the complete set of people's genes – to properly understand the health issues they are experiencing. They will now receive effective, personalised treatment, as well as helping prevent future generations who share their DNA from suffering a life of uncertainty about similar symptoms.'

Department of Health, March 2015

Wider societal impact

Technology is growing at a rapid rate

People are adopting the new technologies at a rapid rate.
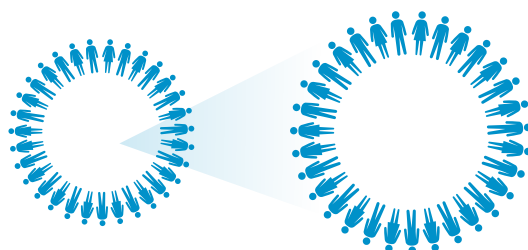
Past and Present

The first computer was invented by Charles Babbage in 1833, the first PC in 1964, the first iPad was released in 2010, the first 3D printer was created in 1984. Computation, storage and connectivity have improved hugely both in terms of cost and capability compared with a few decades ago.
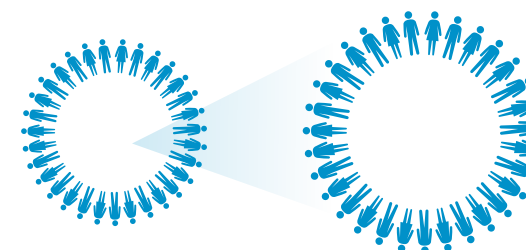
Past and Present

In 2016, 41.8 million adults (82%) in Britain accessed the internet every day, compared with 16.2 million (35%) in 2006.

The largest increases in recent internet use have been seen in the older age groups, particularly for women aged over 75, where there has been a 169% increase since 2011. In 2016, 75% of adults had accessed the internet "on the go", using a mobile phone or smartphone, portable computer or handheld device. Almost all adults aged 16-24 (97%) have accessed the internet 'on the go' compared with only 33% of those aged 65 years and over.

Future Trends

The speed of progress in an era of the '4th Industrial revolution' has not been witnessed before. Current breakthroughs are now developing at an exponential, rather than linear speed.

Future Trends

On one estimate the number of internet enabled devices will reach over 26 billion, serving 4 billion users.
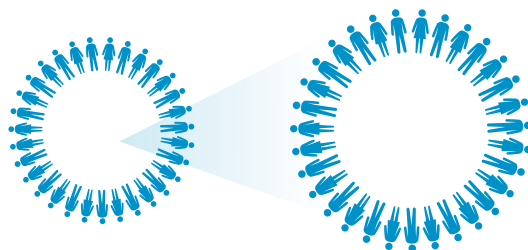
In a global ranking of countries best placed to take advantage of new information technologies the UK has maintained a top 10 place.

Wider societal impact

Technology is driving innovation in all industries.

And changing how people relate to one another.

Past and Present

Banking, airline services and service industries have used technology and innovation to re-engineer the whole service, re-casting the roles of and relationship between the consumer and professional (e.g. ATMs and online booking for flights and holidays).
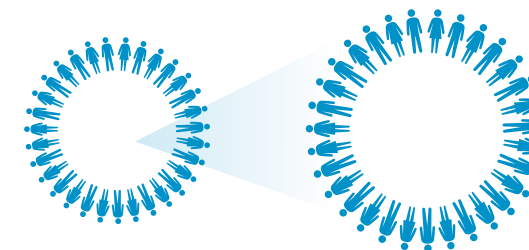
In the airline industry 70% of flights are booked online and 71% of travellers compare more than one website before purchasing. A paper ticket was once a critical 'trusted' travel document, yet today around 95% of tickets are issued digitally as e-tickets.

Past and Present

Email, text, Facebook, Skype and Whatsapp allow geographically separated families to stay in touch, and facilitate online communities and knowledge forums.

Future Trends

Successful industries of the future will be inexpensive, personalised, open source, complex, with the ability to make rapid decisions.

Future Trends

Humanity is evolving into an ubiquitous information society, with the potential for personalised hubs of support, which will increase the pressure on services to respond.

Impact on health and healthcare

Increased role in the education and training of our workforce.

Increased ability to predict disease in individuals rather than population trends.
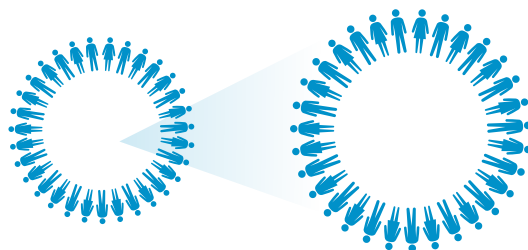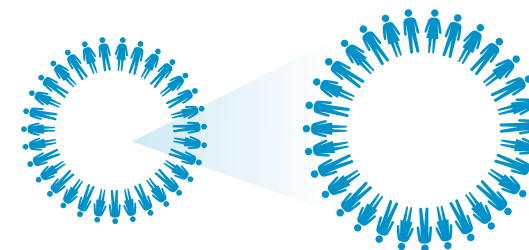
Past and Present

The majority of education and training packages are currently provided in academic or clinical settings for the formal workforce, which are time consuming and costly. In a recent multi-centre Trust survey 92.6% of the doctors and 53.2% of nurses found their smartphone to be 'very useful' or 'useful' in helping them to perform their clinical duties, while 89.6% of doctors and 67.1% of nurses owning medical apps were using these as part of their clinical practice.

Future Trends

E-learning, apps and simulators will become even more of a key feature of improving the quality and cost of educating not just the formal workforce but patients and their carers.

Past and Present

The current medical model is based largely upon a 'diagnose and cure' paradigm, which means the health system can only react when something goes wrong.
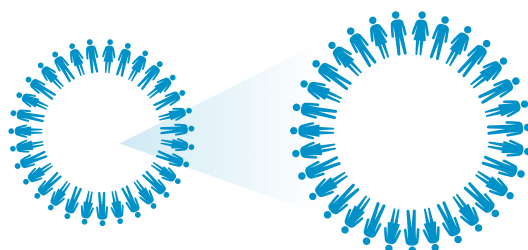
Future Trends

Human Genome sequencing will allow more of a 'predict and prevent' paradigm of care, and enable targeted treatment for better outcomes.

Impact on health and healthcare

Increased potential to prevent some diseases/crises.

Increased ability to diagnose conditions.

Past and Present

Six out of ten people are likely to develop a disease that is at least partly genetically determined – but it is still rare for someone to have their genome sequenced.
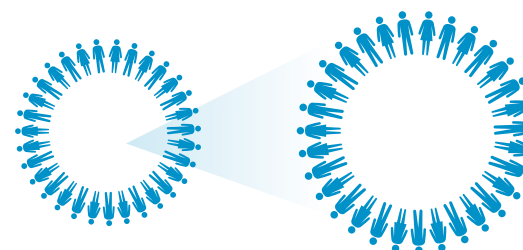
Sequencing an individual's genome is one of the foundations of precision health and is fast becoming financially viable: we have seen exponential advances in technology that have transformed the cost of sequencing an individual's genetic information from more than £2 billion in 1990 to around £750 in 2016.

Future Trends

Into the future, the use of implantable sensors and remote monitoring could help us detect health and disease biomarkers in real time, and when taken together with other data, could help more precisely locate the optimum personalised choices for the patient.

Past and Present

Near patient testing, outside of the hospital setting has the potential for significant benefits for patients and the NHS, such as helping to reduce referrals, increase efficiency and positively impact on costs, all helping to improve outcomes.
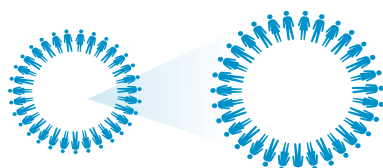
Future Trends

Earlier diagnosis at point of care will enable more distributed models of care to be supported.

Impact on health and healthcare

Increased potential to expand and improve ways in which ill health is managed.

KEY MESSAGE:

**Increased ability to cure ill health.**

Past and Present

Currently, face-to-face contact accounts for nearly 90% of all healthcare interactions.The number of health apps which can be downloaded exceeds 165,000. There was 118% growth in the UK between 2014-2015 in the sales of wearables. In the coming year an expected 9 and 8% will buy or upgrade a fitness band or smartwatch respectively in Britain.
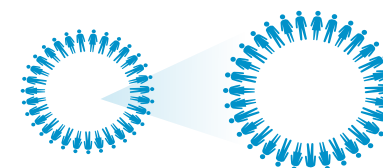
Past and Present

Nanomedicines are used globally to improve the treatments and lives of patients suffering from a range of disorders including ovarian and breast cancer, kidney disease, fungal infections, elevated cholesterol, menopausal symptoms, multiple sclerosis, chronic pain, asthma and emphysema. The nanomedicines that are currently available are overcoming some of the difficulties experienced by normal medical approaches in delivering the benefit from the drug molecules used. Another important area of nanotechnology and nanomedicine is diagnostics. By studying and identifying individual molecules, it is possible to diagnose disease in time to improve the prognosis for the patient.

Future Trends

The individual and their home could be the centre of care, using technology to access and supplement formal care throughout the pathway. One survey showed that 78% of patients had booked appointments online with 76% finding it easy to book them.

Future Trends

There is increasing optimism that nanotechnology (the science of technology of small things) applied to medicine and dentistry will bring significant advances in the diagnosis, treatment, and prevention of disease. Technologies in development, such as smartpills and nanobots, could pave the way (within a decade), for fewer invasive procedures, with benefits for recovery and cost reduction.

People will pull the system

Historically, most attention has been focussed on exciting new breakthroughs in our ability to diagnose and treat disease, but in the future the potential for radical innovation lies in re-engineering how ill health is managed, that is, the respective roles and responsibilities of both staff and 'patients' and how they use technology to support them during and in between interactions with 'professionals'. What will Jamie expect at home, at work, as a patient? And what will be the role of technology in these aspects of his life? How will it affect others not so technologically enabled?

Jamie, 2017, at home..

Has all his music, films, TV, photos, connected and filed digitally.

Can access information 24/7 and connect with friends and family from around the world instantly.

Self-monitors all his vital signs, calorie/alcohol intake and sleep patterns, with warnings flagged to his e-health account.

When he goes to work as a physiotherapist will he accept...

Paper-based records for his patients.

Access to senior advice only face-to-face and if 'on call' and not 'out-of-hours' at weekends.

That he, as the trained physiotherapist is responsible for the care of the patient, and that the patient has no responsibilities.

Find out more about Jamie by clicking here

When he is a patient will he accept...

Having to repeat his story every time he meets a different health or social care professional.

Sub-optimal care dependent on physical presence, when his iPad instantly shows him the international standard he should expect for his treatment.

Only seeing a health professional when something goes wrong, with little opportunity for virtual conversations about prevention and rehabilitation.

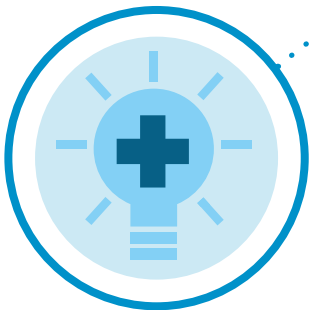# The challenges

If technology and innovation is

growing exponentially, revolutionising the wider world as well as the field of health and healthcare...

And people are

using technology in every aspect of their life, as staff and patients, to increase control and personalisation in their work and home life...

How do we

- ensure our staff have the skills to respond to and adopt new research, technology and innovation?

- ensure that the places in which care and training are provided (homes, community, hospitals) facilitate the use of technology?

- avoid an over emphasis on technology, recognising models of care can become quickly out of date as new technology emerges but care and compassion must remain?

Social, political, economic and environmental factors

The context within which the health service operates is also a driver of change, and includes the following macro-environmental factors:

POLITICAL FACTORS

the degree to which the government intervenes in the economy and service provision in general and in the health sector in particular.

SOCIAL FACTORS

these are diverse and include technology, expectations and demography (already covered elsewhere), as well as cultural issues such as the changing perceptions of notions of 'illness' and 'health' and family make-up.

ECONOMIC FACTORS

including economic trends in general and the resources available for the health system in particular.

ENVIRONMENTAL FACTORS

changes in our climate or weather patterns, resistance to antibiotics, new/mutated pathogens, air quality, and availability of natural resources will impact upon population and individual health.

REGULATORY FACTORS

the degree to which the health sector is regulated, by whom and with what consequences.

Social factors

Past and Present

In 1948, there were relatively stable concepts of illness that the NHS could be expected to 'fix' such as broken bones, eyes, teeth, trauma and disease.

Future Trends

Our growing ability to diagnose and treat certain conditions means that we are now able to treat and manage conditions such as: infertility, arthritis, the menopause, depression etc. A broader concept of 'wellness' rather than health merely being the absence of disease will be the social norm.

Issues

Just because we are able to treat a condition does this make it a 'disease'? And is every 'disease' a matter for collective rather than individual responsibility? Do we need to start planning a workforce based around a broader concept of wellness?

Past and Present

The NHS is built on the concept of a 'veil of ignorance' – no-one knows which disease will strike which person down tomorrow, so risk is collectively pooled.

Future Trends

Our understanding of the role that socio-economic status and lifestyle play in disease, and the ability to 'risk profile' individuals based on their genetic profile will mean the veil of ignorance is pulled away. For example, we know that people with no qualifications are five times more likely to engage in unhealthy behaviours. Also, adults with a higher level of qualifications were less likely to be smokers. Only 9% of those with a degree were smokers compared to 19% overall.

Issues

As people understand more about their own and each other's risk profiles, will they be so willing to collectively pool risk and distribute costs according to wealth? To what extent will society tolerate or demand healthcare staff intervening in matters previously deemed 'personal choice'?
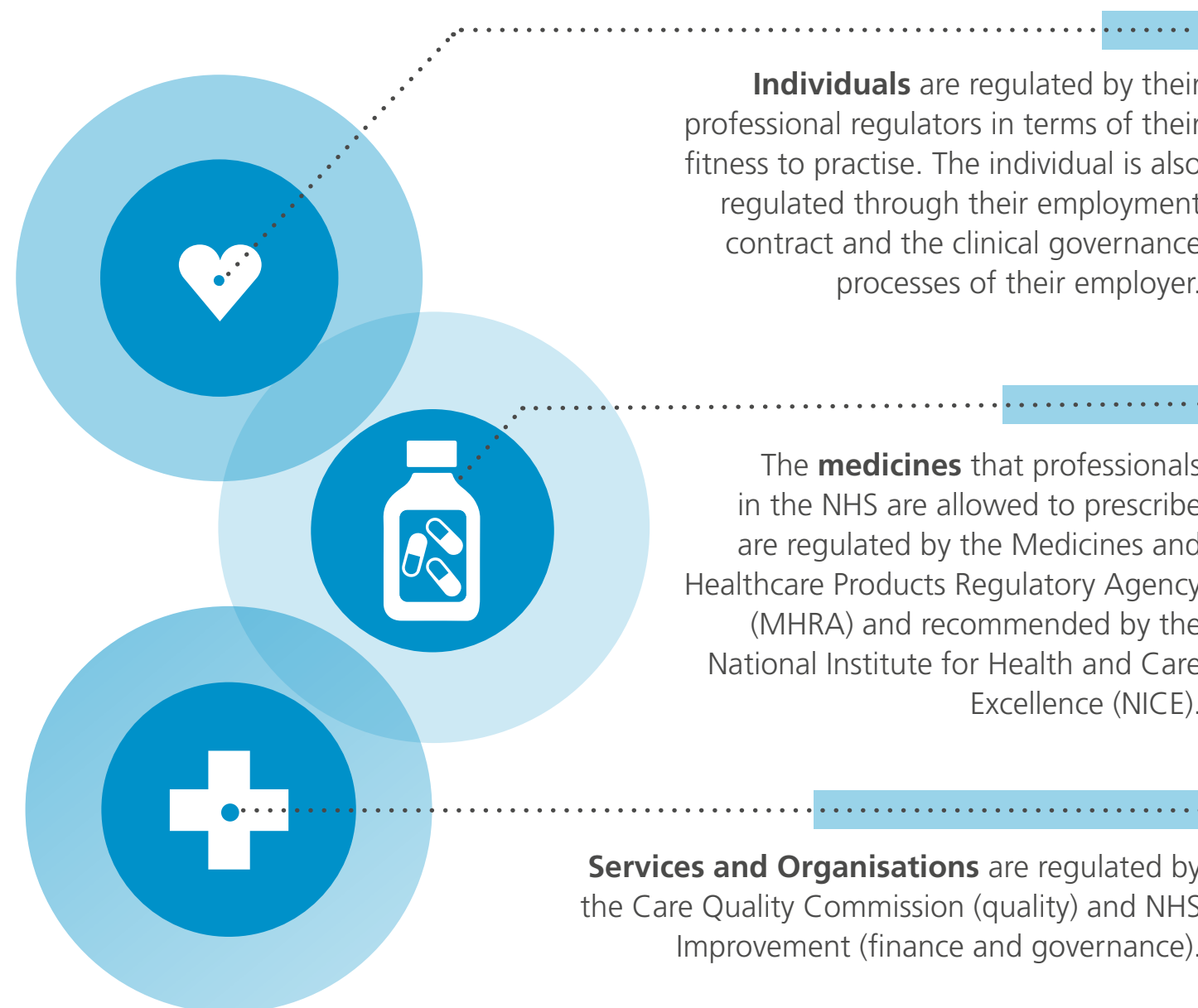
Regulatory factors

The regulatory environment can influence the behaviour of individual staff and organisations. It may help drive up quality, but it could also affect willingness to take risks and ability to innovate. The growth in information and transparency is likely to increase the role of regulation across the system.

The combination of a number of wider regulatory and legal changes also has the potential to cause uncertainty around supply for employers in the years to come, this includes changes within the EU and the UK's relationship with its regulations.

Healthcare is currently regulated on three levels:

Individuals are regulated by their professional regulators in terms of their fitness to practise. The individual is also regulated through their employment contract and the clinical governance processes of their employer.

The **medicines** that professionals in the NHS are allowed to prescribe are regulated by the Medicines and Healthcare Products Regulatory Agency (MHRA) and recommended by the National Institute for Health and Care Excellence (NICE).

Services and Organisations are regulated by the Care Quality Commission (quality) and NHS Improvement (finance and governance).

Economic / Political factors

Past and Present

In the UK Government's Autumn statement, forecast economic activity to Q3 2016 grew 2.3%. OBR forecasts for GDP for 2017 and 2018 put the figure at 1.4% and 1.7% respectively.

Future Trends

The world economy is projected to grow at an average of just over 3% per annum in the period 2014 -2050,doubling in size by 2037 and nearly tripling by 2050. New emerging economies like Mexico and Indonesia are projected to be larger than the UK and France by 2030 (in PPP terms) while Turkey could become larger than Italy. Nigeria and Vietnam could be the fastest growing large economies over the period to 2050.

Issues

The long term trend has seen the NHS take an increasing share of income since the 1950s, and spending on long term care has been predicted to double or even treble across all OECD countries by 2050. But when the wider economy is under such pressure, how can historic or predicted patterns of growth be maintained?

Economic / Political factors

Past and Present

50 years ago, the NHS consumed 3.4% of GDP (net spending grew by an average of 4% p.a. between 1955-2011). In 2015 health spending accounted for 9.8% of GDP. The economic conditions for the NHS remain challenging. Factors such as the changing age structure of the population, higher incidences of long term conditions and increased demand continue to put pressure on NHS budgets.

Future Trends

The UK Office for Budget Responsibility's latest health and long term care projections suggest healthcare spending could rise from 6.2% in 2020-21 to 8.0% by 2065-66.

Issues

Studies from bodies such as the OECD, the IMF and the European Commission all envisage a level of health spending which will grow at a faster rate than the growth in GDP over the long term, with similar trends forecast for many other advanced economies.

Workforce accounts for the majority of spend (around two thirds of providers' expenditure) so the whole way in which we plan, recruit, reward and retain staff is likely to come under greater scrutiny.

Environmental factors

Past and Present

The use of antibiotics has been an essential component of 20th and 21st century medicine, allowing the treatment of severe, life-threatening, infections and stopping minor infections progressing uncontrollably. Antibiotics allow major surgery to take place with a much reduced risk of infection, and, together with drugs, which suppress the immune system, have made organ transplantation possible. It is no exaggeration to say that they have transformed healthcare, and saved or improved the lives of millions.

Future Trends

Resistance to current antibiotics has increased steadily since they were introduced in the 1930s and 1940s and the new ones currently in development are not thought to be able to combat the most dangerous forms of AMR bacteria.

Without the ability to use effective antibiotics for the prevention and treatment of infection, interventions such as organ transplantation and chemotherapy (among others) will carry greater risks.

Issues

From a workforce perspective, it is likely that health workers of the future will need to strike an increasingly delicate balance between reducing the threat of increased resistance, and providing timely and appropriate treatment of bacterial infections. It is also likely that the future workforce will need to develop skills and knowledge to deal with the re-emergence of diseases which once were thought of as eradicated or easily treatable (e.g. tuberculosis). Healthcare staff will also need to develop vital skills in public and patient education and awareness.

Environmental factors

Past and Present

Temperatures have been increasing by around 0.25% per decade since the 1960s. The heatwave of 2003 resulted in over 2,000 excess deaths across England and Wales with particular impact on people over 75.

Future Trends

Measuring the health effects from climate change can only be very approximate. Nevertheless, a WHO assessment, taking into account only a subset of the possible health impacts, and assuming continued economic growth and health progress, concluded that climate change is expected to cause approximately 250,000 additional deaths per year between 2030 and 2050; 38,000 due to heat exposure in elderly people, 48,000 due to diarrhoea, 60,000 due to malaria, and 95,000 due to childhood undernutrition

Issues

Many of the predicted changes will place an increased demand upon our urgent services, whilst the possible growth of or introduction of diseases new to the UK may require new skills and services. Services will need to be designed for greater resilience to severe weather and pressure on natural resources such as energy and water.

The challenges

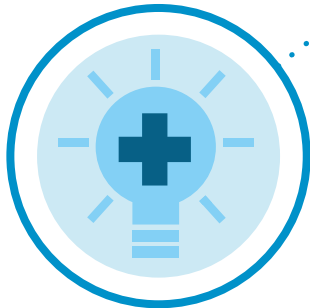## If social, political, economic and environmental factors

are creating global pressures to constrain the costs of publicly funded healthcare...

And people are

developing broader concepts of 'wellness', which they expect health services to respond to...

How do we

- balance need with supply, ensuring that patients needs are met in a way that reflects the social contract with citizens and tax payers?

- ensure a more strategic approach to our investment in our most valuable and costly resource (our staff), to achieve maximum benefit from finite resources?

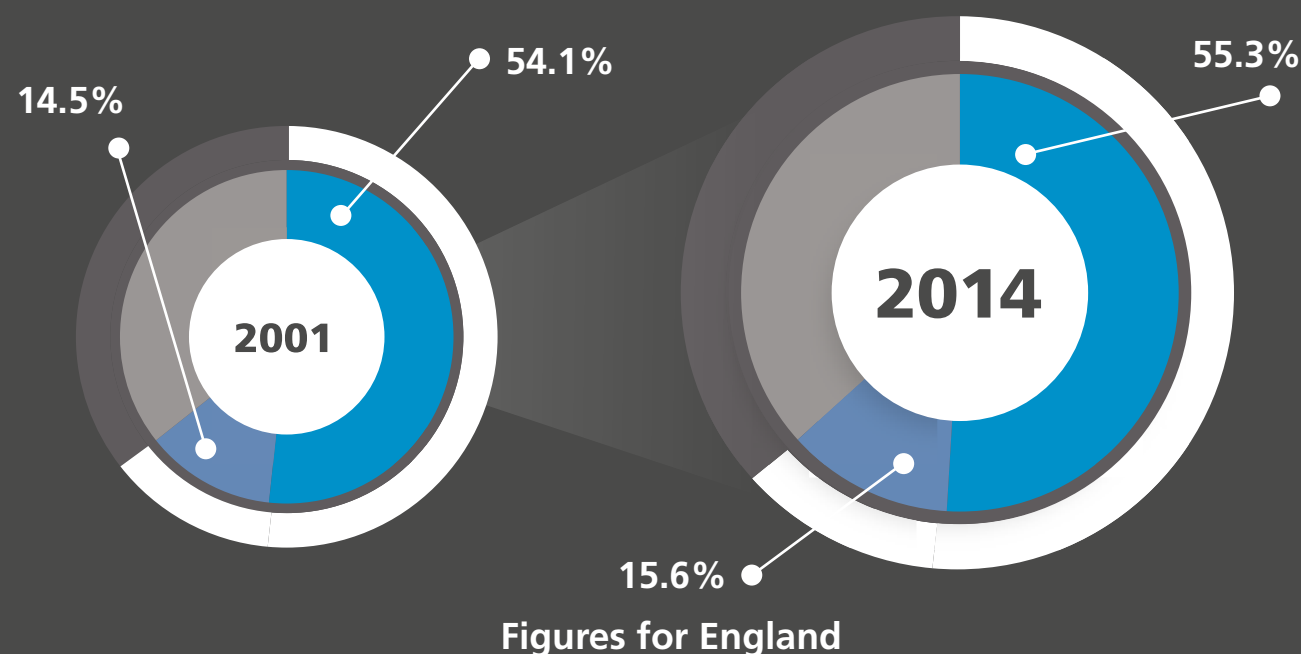# Current and future service models

'We are moving away from a 20th century model with its outdated divisions of hospital based practice and of 'health' and 'social' care... towards a 21st century system of integrated care, where clinicians work closely together in flexible teams, formed around the needs of patients and not driven by professional convenience or historic location'.

RCGP, 2022 GP.

Whilst we are supportive of this vision, we also recognise that the service has sometimes struggled to deliver major shifts in how care is provided.

In **2001,** of the **256,218** full-time equivalent (FTE) qualified nursing workforce, **14.5%** were designated as working in community services with **54.1%** in acute, elderly and general services. In 2014, these had risen to **15.6%** and **55.3%,** showing that there has been no significant shift between the two.

○ Nurses working in community services

○ Nurses working in acute, elderly and general services

14.5%

54.1%

2001

55.3%

2014
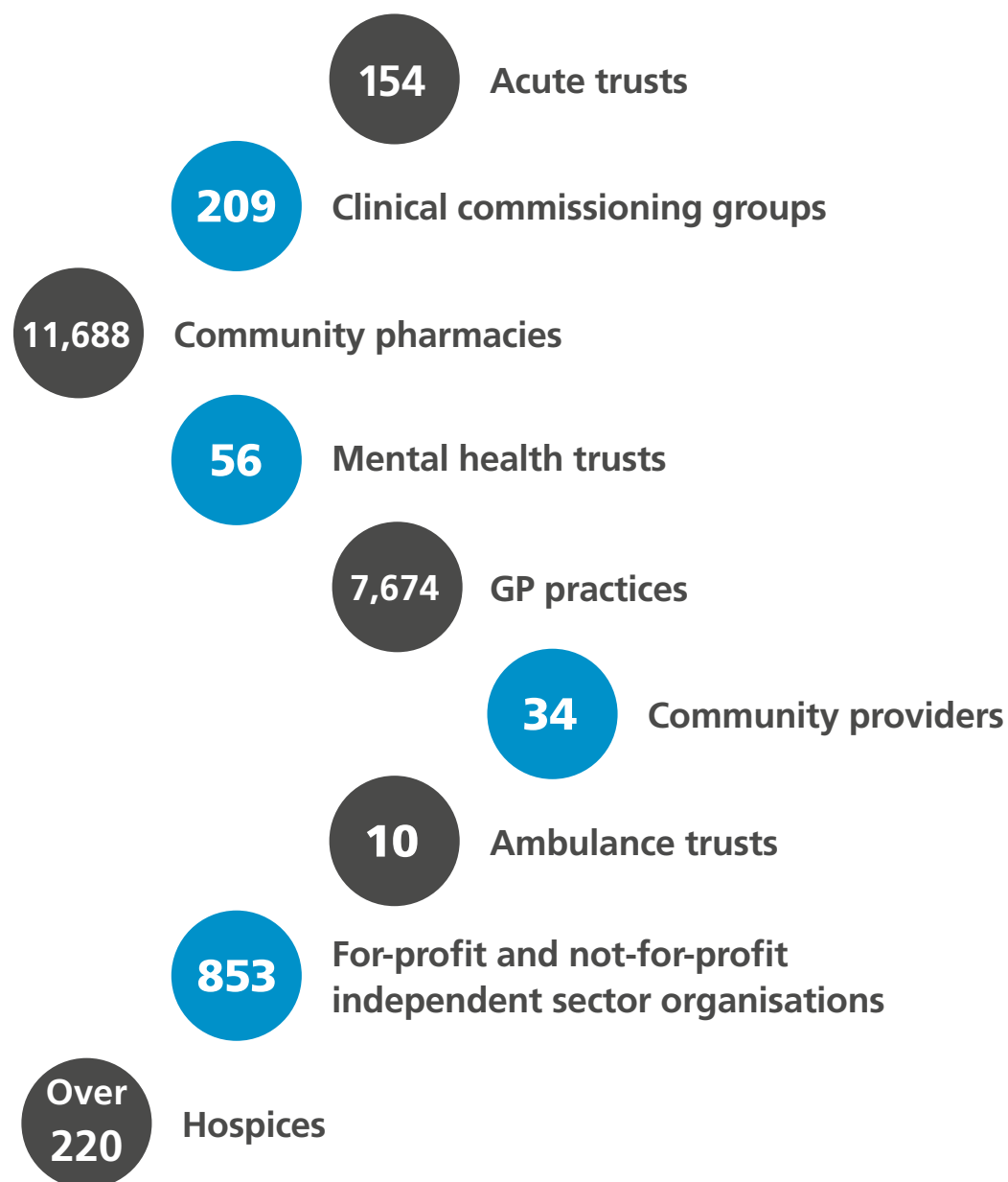
15.6%

Figures for England

Current and future service models

So when considering drivers of change, we need to recognise some of the obstacles, such as the bricks and mortar within which healthcare is currently provided. Currently, there are across England:

The size, location and remit of all of these different organisations profoundly affect how and when patients access care and how and where staff provide that care. The existing and future configuration of services, therefore, needs to be a key component of workforce planning.

Following on from the publication of Five Year Forward View, education commissioning and workforce planning will need to support the new care models as they are increasingly adopted across the country. This will include working with STP areas through LWABs, vanguards and other sites to develop effective local workforce strategies; introduce new and extended roles; enhance the skills of existing staff; and build an engaged, satisfied and healthy workforce.

154 Acute trusts

209 Clinical commissioning groups

11,688 Community pharmacies

56 Mental health trusts

7,674 GP practices

34 Community providers

10 Ambulance trusts

853 For-profit and not-for-profit independent sector organisations

Over 220 Hospices

Current and future service models

There is a growing academic and professional consensus about the way in which future services should be provided.

Past and Present

Between 1959 and 1990, the number of hospitals fell from 2,138 to 1,185. Between 1990-1994, 245 were closed including 60 acute and 14 maternity. Of 223 short term stay hospitals in 1997, 112 had merged by 2006.

Future Trends

The development of Vanguards, Integrated Care Pioneers, and the implementation of Health and Social care devolution, all within the context of the new Sustainability and Transformation Planning (STP) process, will help shape new ways of delivering services.

Issues

The training, education and development of the NHS workforce will need to ensure that it takes account of these different models of care. Smaller hospitals will have new options to help them remain viable, including forming partnerships with other hospitals further afield, and partnering with specialist hospitals to provide more local services.

Past and Present

There have been examples of evidence emerging of better outcomes overall for patients where services are consolidated, such as Stroke services in London. In some services there is a compelling case for greater concentration of care.

Future Trends

The future will see far more care delivered locally but with some services in specialist centres, organised to support people with multiple health conditions, not just single diseases.

Issues

Services may increasingly operate across traditional boundaries to provide co-ordinated care for patients 24/7. This will include the increasing move towards integration of health and social care services.

Current and future service models

Against the backdrop of technological, social and demographic change, the delivery of more care closer to home, alongside a greater emphasis on prevention, is gathering momentum.

Past and Present

With a total yearly investment of more than £11 billion, community services make up approximately 10% of the NHS budget. Care closer to home can be effective: the Department of Health's Whole System Demonstrator study reported a 24% fall in elective admissions, a 14% reduction in bed days, a 21% drop in emergency admissions, a 45% reduction in mortality and a fall of 15% in A&E visits as a result of delivering care at or closer to home.

Future Trends

Close collaboration between commissioners and providers is needed to facilitate the necessary shift in the balance of care to local settings, improve care coordination and make better use of limited resources. Significant investment is needed in innovation to deliver more care in people's homes, such as telehealth, mobile diagnostics and mobile care records.

Issues

Previous attempts to radically change the nature and location of service delivery have not succeeded on a large scale. What if these new models of care also do not materialise? If models of care do not continue to evolve in a way which fully embraces parity of esteem and innovative delivery approaches the NHS will lose the opportunity to fully harness the skills of graduating students who have been trained to work in these new ways.

Past and Present

Latest information shows that most deaths (47%) occur in NHS hospitals, with around 23% occurring at home, 22% in care homes, 6% in hospices and 2% elsewhere.

Future Trends

A VOICES survey of bereaved relatives shows that most of them (81%) believed that the deceased family member had wanted to die at home.

Issues

We need to ensure that people are increasingly able to die in the surroundings that they choose, and that we have staff with the right skills in the right place to support this.

Current and future service models

Patient choice is enshrined in our NHS Constitution. Workplace approaches to supporting health and wellbeing are increasingly recognised as having a key role to play in preventing ill health.

Past and Present

In 2014 in England and Wales, 2.3% of women giving birth did so at home, unchanged from 2012.

Future Trends

We need to ensure that women are provided with more personalised care and choice, as well as the very best professional advice to support them to make informed choices and have high-quality care wherever they choose to give birth.

Issues

In a recent CQC survey, 60% of all women said that they were offered a choice of hospital, 39% were offered the option of a home birth, 41% said that they were offered the choice of giving birth in a midwife-led unit or birth centre and 18% in a consultant led unit. 16% of women felt that they were not offered any choices. This shows an improvement on previous figures.

Past and Present

Type 2 diabetes now accounts for just under 9% of the overall NHS budget each year.

Future Trends

An evidence based diabetes prevention programme will provide an example of behaviour change approaches which can help to prevent or delay long term conditions.

The NHS Diabetes Prevention Programme has now started, which has so far provided an initial 20,000 places available across 27 areas in England. By 2020 the programme will be in place across the country.

Issues

How can we best support the workforce to make every contact count?

A broader concept of wellness and an understanding of risk profiles can provide integrated care across a wider multidisciplinary team. With 58% of adults and 73% of children visiting an NHS dentist in a 24 month period, dentistry offers a unique setting to offer brief interventions through screening for early diagnosis of conditions such as diabetes whilst the patients are still healthy.
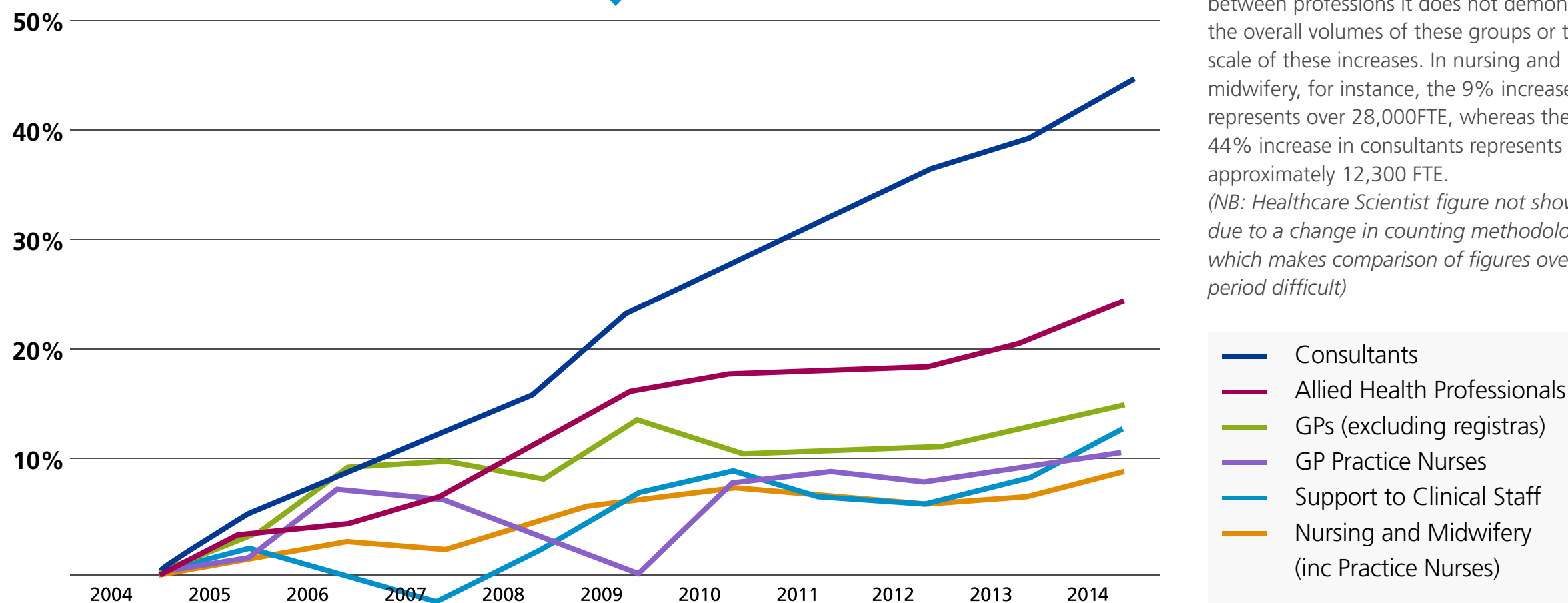
Historical trend for investment in workforce (taken from NHS Digital annual census)

Historically, the main drivers for investment and disinvestment in the overall workforce as a whole appears to have been a reaction to a combination of factors including the economy, politics / policy and supply driven demand.

% increase in NHS employed staff 2004 to 2014

While this graph shows the relative growth between professions it does not demonstrate the overall volumes of these groups or the scale of these increases. In nursing and midwifery, for instance, the 9% increase represents over 28,000FTE, whereas the 44% increase in consultants represents approximately 12,300 FTE.
(NB: Healthcare Scientist figure not shown due to a change in counting methodology which makes comparison of figures over the period difficult)

Legend:
- Consultants
- Allied Health Professionals
- GPs (excluding registras)
- GP Practice Nurses
- Support to Clinical Staff
- Nursing and Midwifery (inc Practice Nurses)

The challenges

If the majority of our staff

currently work in hospitals, in isolation from other sectors providing their 'bit' of care...

And the policy trend is for

more integrated care in fewer hospital-based settings and closer to people's homes...

How do we

- ensure that we have staff in sufficient numbers with the right skills and behaviours to provide integrated and community based care wherever the patient need is?

- provide the required education and training in the right places to equip our existing and future workforce for these new models of care?

- ensure a safe transition between models, so that current patients do not suffer at the expense of future patients?

- work with our partners to ensure effective succession and capacity planning during this transition?

Expectations of patients and staff

In this section, we consider the expectations not just of those who use the service (patients and their carers) but the 1.3 million staff who provide it – who themselves may also be patients. Advances in technology and innovation notwithstanding, the healthcare system would not exist without the people who work for it. So whilst it is right and proper that we design our services around the needs of current and future patients, we cannot do this in isolation from or in opposition to what we know about staff and their expectations of a working (and home) life. Our visions and plans will never become reality if we cannot attract the right number of staff, with the right skills, behaviours and values to work in the settings and locations that patients require. We also identify areas of alignment and conflict between patient and staff expectations that will need to be considered when planning the future workforce.

'What's important to me at the moment is to maintain my quality of life and expand on it in the future. There are a lot of things I would like to do. Hopefully live independently, maybe to start off in some sort of sheltered accommodation.'

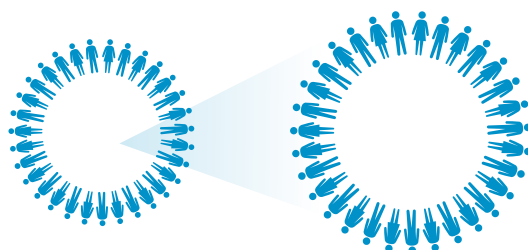A person with Cerebral Palsy, National Voices: National Voices' guide to care and support planning

Patients' expectations

Patients will expect not to wait at all.

Patients will expect high-quality care anytime, anyplace, anywhere delivered through seamless services.
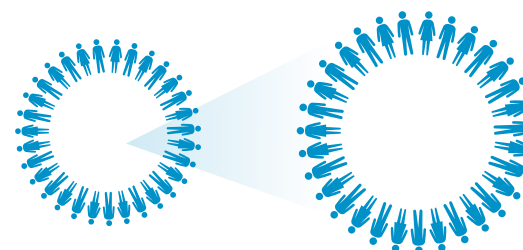
Past and Present

In 1988, the average waiting times for elective procedures were over 40 weeks. Today, waits for elective procedures from referral are significantly shorter.

Future Trends

In a world of instant information, patients will expect to wait at most for hours (urgent) or days (elective), with digital/remote advice replacing silent waiting.

Past and Present

Despite improvements, the quality of care can vary depending on which hospital a person is treated in, by whom and when. For example one year survival rates for cancer are over 10% higher in some CCG areas than in others.
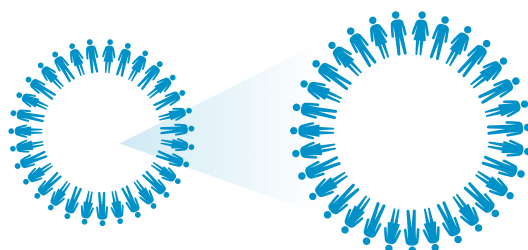
Future Trends

Information will make patients more aware of and less tolerant of variation for themselves and their families, expecting professional expertise available 24/7 with seamless services based on patients' needs.

Patients' expectations

Patients will become 'more active consumers' rather than 'grateful citizens'.

As well as swift, high-tech and safe services, patients will always expect and value care and compassion above all else.
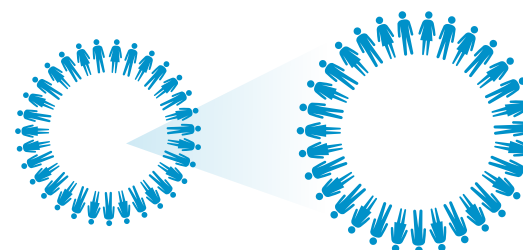
Past and Present

Four out of ten respondents to a national survey were able to recall being offered a choice of hospital or clinic for an initial outpatient appointment, while 92% of respondents who had recalled being offered a choice of hospital or clinic indicated that they were able to attend their preferred choice.

Past and Present

In recent years, the NHS has responded to the failures of care such as Mid Staffordshire Foundation Trust, Winterbourne View and Morecambe Bay, through reaffirming the central role of care and compassion.

Future Trends

Choice may be increasingly exercised not just at organisational level (which facility) but at the individual level (which health professional) and also in terms of treatment options (which pathway of treatment do I wish to follow).

Future Trends

The first programme of inspections with ratings for NHS providers in acute services, mental health and community services has now been completed by the CQC. However the 'Care and Quality gap' is identified as one of three which would risk opening up if the Five Year Forward View vision is not achieved.

Patients' expectations

Staff in training want a better work/life balance when they qualify.

Our staff profile is getting older, so more staff will want to work part-time (PT).
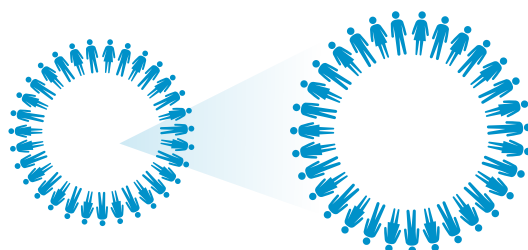
Past and Present

Prior to the implementation of the Working Time Directive (WTD) junior doctors were working 80+ hours per week. Since the directive's full implementation, junior doctors are limited to working an average of 48 hours per week.
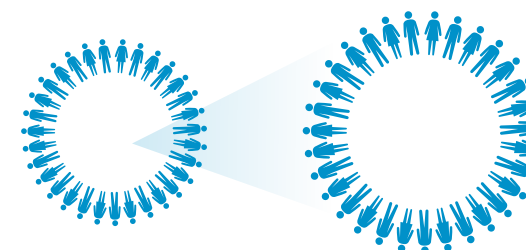
One survey showed that 73% of pharmacists work full-time, the remainder working part-time, though this varies between settings. For pharmacists, jobs in primary care were more likely to be part-time.

Past and Present

Currently, no more than 30% of the workforce works part-time before the age of 55. This rises to 50% by 60 and 80% by 65.

Future Trends

Recent evidence shows that the numbers of women who have children and who work Less Than Full Time (LTFT) are significantly fewer in hospital and surgical specialties, than is the case in General Practice, although with the growing proportion of female doctors within the NHS, an expectation of more widespread establishment of LTFT posts across medicine is to be expected.
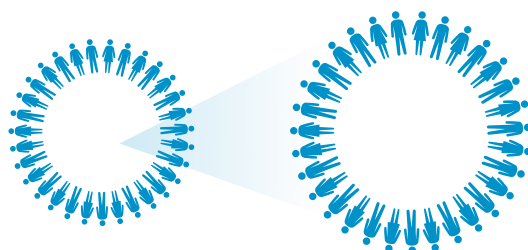
Future Trends

The demand for part-time working will increase as the age profile of our staff rises. The average age of NHS staff is 43 and is currently rising. One prediction being that the mean age will be 48 by 2023.

Patients' expectations

Staff may expect a degree of professional autonomy and respect that is no longer available.
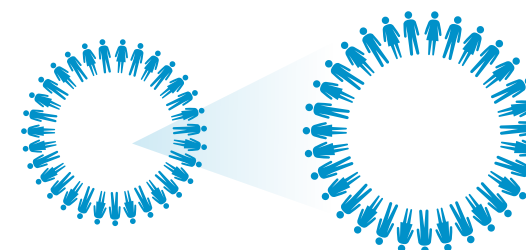
Past and Present

The advent of 'evidence based medicine', national standards and regulation and employers' policies and protocols has reduced the autonomy of professionals.

Future Trends

The growth of social media and exponential rise of web-based information, devices and solutions will increase this trend, and, as patients become more informed, professional advice may be just one of many inputs into their decision-making.

KEY MESSAGE:

Staff want more 'time to care'.

Past and Present

Surveys suggest one of the biggest causes of anxiety and dissatisfaction is not having enough time to care. In one survey, 86% of nurses reported that on their last shift, at least one of the 13 researched care activities needed was not completed due to a lack of time (with an average of four being missed).

Future Trends

Staff are being encouraged to speak up about their concerns.

The challenges

So if patients will want

access to high-quality services anytime, any place, anywhere; a more equal (and challenging) relationship with staff but one still based on care...

And staff will want

a better work/life balance alongside continued job satisfaction and professional development, with time to care...

How do we

- attract sufficient numbers of staff into the areas where need is greatest, providing a flexible work/life balance whilst also meeting the 24/7 demands of the future patient?

- equip staff to respond positively to more challenging patients, to re-think the role of the professional within the internet age whilst still recognising the primacy of care?
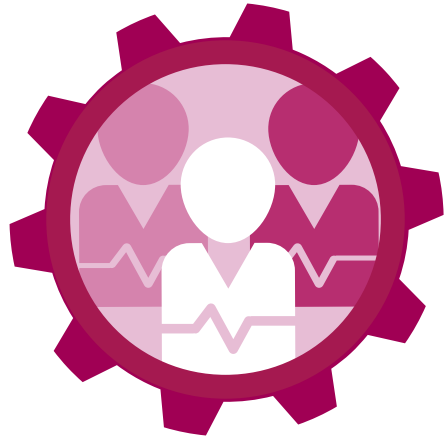
Part 2

People and patients of the future

Introduction

We have considered what the key drivers of change are in healthcare. The challenge now is to assess how those drivers will influence (and be influenced by) the patients and people who use, fund and work for the healthcare service. We have called this next section 'People and Patients of the future' in recognition of the increasingly unhelpful distinction between the two. We identify some high level characteristics and trends for the future as an aide for future planning, but acknowledge there will be a myriad of differences within and between individuals and groups of patients.

The service visions of providers and commissioners (i.e. the staff that Trusts intend to employ and the service models that Clinical Commissioning Groups intend to buy) are often based around implicit assumptions about future patient need. Sometimes, different assumptions are made about the same population, and occasionally, the 'model' itself becomes a proxy for patient need. We believe that the anticipated needs of future patients should be at the heart of all our strategic planning and processes and that we should be explicit about what they are. Our ultimate aim is not to supply a workforce for any particular organisational structure or care model, but to ensure we have staff in the right numbers with the rights skills, values and behaviours to meet current and future patient needs.

''The Future' is already here – it's just not evenly distributed.'

William Gibson

Our pen portraits - We have devised four 'pen portraits' of people and patients of the future and you can read more about Gemma, Bob, Andrew and Salma by clicking here.

Individuals at different starting points

Factor

Parity of esteem for mental health and learning disabilities

Issue

Analysis suggests that mortality rates for people with serious mental illness (under 75) are over three times higher than the rest of the population. Whilst the proportion has improved in recent years, only a minority of people with mental health problems (except Psychosis) are receiving treatment. Health and Social Care Information Centre (HSCIC) data showed that mortality among mental health service users aged 19 and over in England was 4,008 per 100,000 (83,390 deaths in total) compared to the general population rate of 1,122 per 100,000. (3.6 times the rate of the general population in 2010/11). After allowing for factors such as age and gender, three times as many people with learning disabilities die than would be expected when taking in account overall population mortality rates.

Factor

Social/ economic/ environmental

Issue

There is a 6.2 years difference that a man can expect to live in good or very good health when comparing the best and worst figures for areas across England. For women the gap is even bigger at 6.6 years. Social isolation and loneliness have been linked to an increase in death rates. 60% of young offenders have been found to have speech, language and communication needs and so cannot access or benefit from any formal learning or support. In one systematic review, it was found that social isolation, loneliness, and living alone increased the risk of premature death. The increased likelihood of death was 26% for reported loneliness, 29% for social isolation and 32% for living alone. In 2013/14, the most deprived people with mental ill health visited A&E 1.8 times more than the least deprived and had 1.5 times more emergency inpatient admissions. In 2013/14, 62 per cent of A&E attendances for those with mental ill health were from people living in the most deprived areas.

Factor

Diversity

Issue

People from BAME backgrounds are less likely to experience high-quality care in the last three months of life, overall and from care homes in particular. The independent taskforce on Mental Health reported that there has not been any further narrowing of race inequalities in mental health care since 2010. Some groups are disproportionately represented in detentions to acute and secure inpatient services, and are affected by long stays. For example, men of African Caribbean ethnic origin are twice as likely to be detained in low secure services than men of white British origin and stay for twice as long in those services on average. This suggests a failure to ensure equal access to earlier intervention and crisis care services.
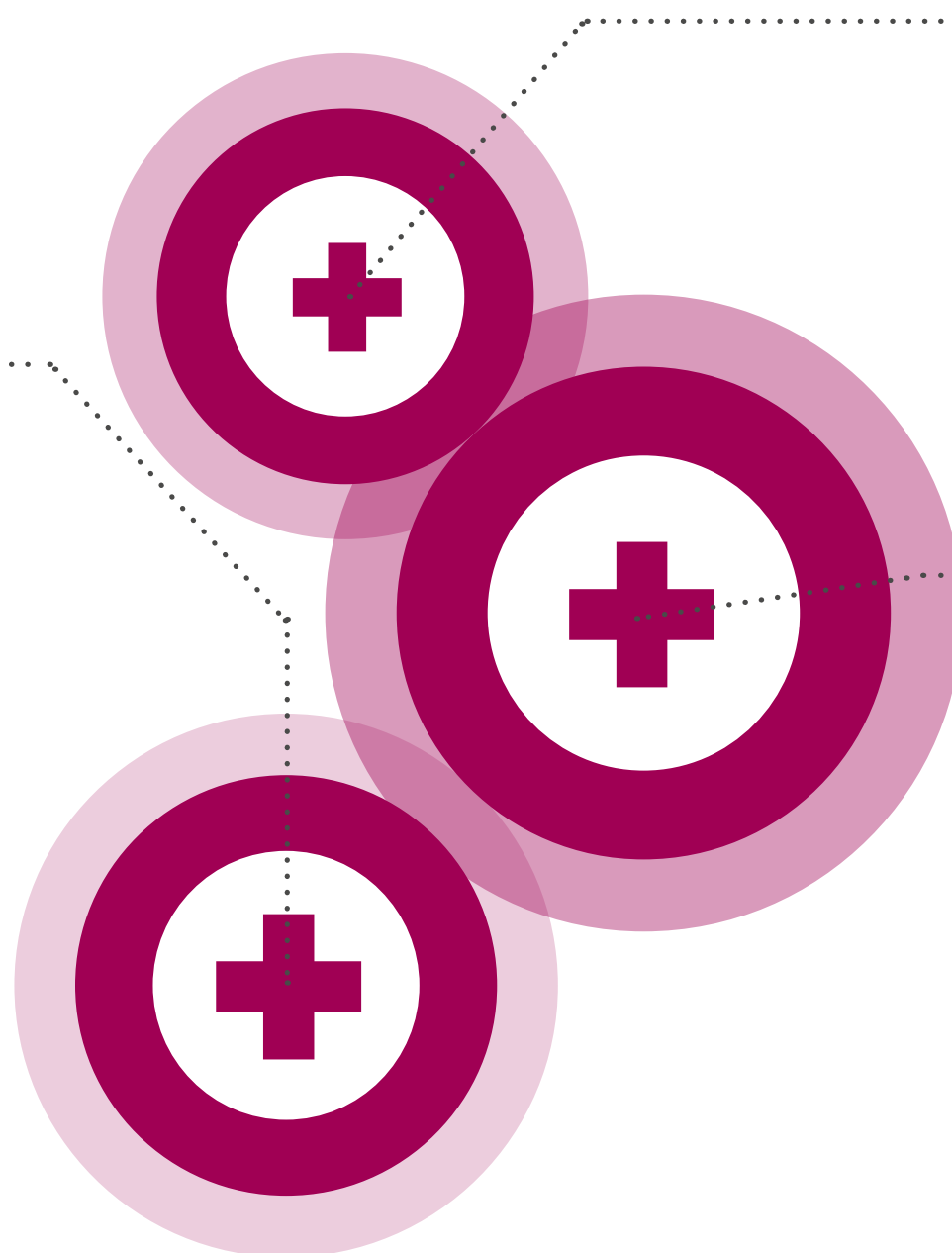
Individuals at different starting points

Other differences are a result of the lifestyle choices that we make:

Alcohol consumption. In 2014/15 there were 1.1 million estimated admissions related to alcohol consumption - 44% of patients were aged between 55 and 74 - 65% were male and 35% female. Alcohol consumption related deaths in England rose 13% between 2004 and 2014 – the year in which the total was 6,831.

Levels of physical activity and obesity. The current levels of inactivity in the population present a major threat to public health. It has been estimated that physical inactivity contributes to almost one in ten premature deaths from coronary heart disease (CHD) and one in six deaths from any cause. As well as the health burden in the UK, physical inactivity has a significant financial burden. A recent estimate of the cost of physical inactivity to the NHS, puts the figure at £455 million for 2013/14. 66% of men and 56% of women meet the guidelines for physical activity.
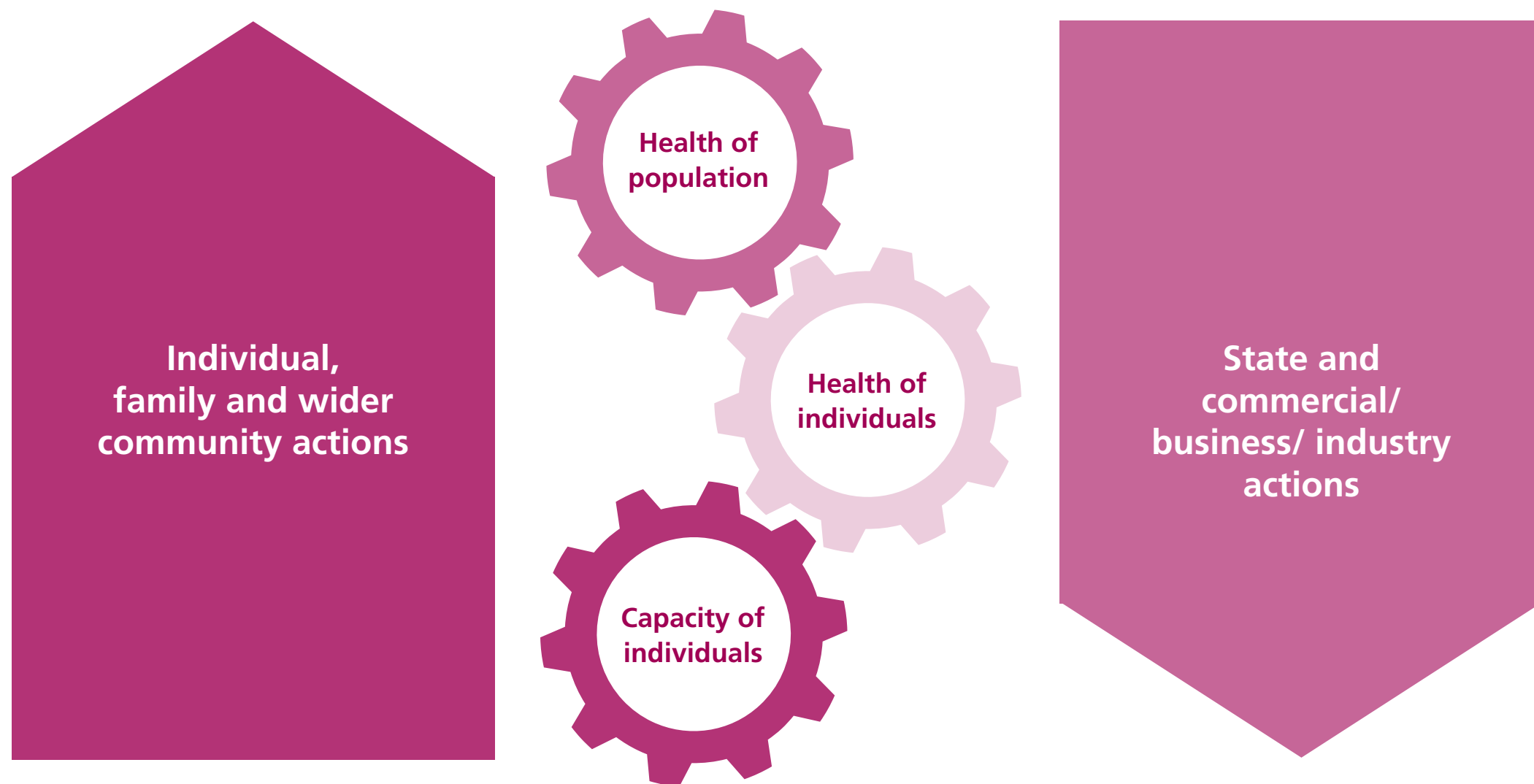
Tobacco consumption. The prevalence of cigarette smoking has fallen over the last four decades. In 1974, 46% of the adult population of Great Britain were cigarette smokers compared with 19% of adults in 2014. The difference in smoking prevalence between men and women has decreased considerably since the 1970s.
In 1974 there was a ten point difference between men and women, 51% of men smoked cigarettes compared with 41% of women, whereas in 2013 there was a five point difference between them (22% of men compared with 17% of women).

Individuals at different starting points

There are interventions that both individuals and society can make, which may increase or decrease the overall health of the population, the distribution and impact of disease and the capacity of individuals to make changes to their own health status in the future.

Individual, family and wider community actions

Health of population

Health of individuals

Capacity of individuals

State and commercial/ business/ industry actions

Multiple and complex conditions

Regardless of how successful public health interventions are (or not), there will be more patients with more multiple complex conditions, as illustrated by these two examples.

Multiple and complex conditions

Salma has a **healthy lifestyle**, is a survivor of cancer (2.5 million in the UK have had a cancer diagnosis). She actively manages her cardiovascular risk with statins and has early onset dementia.

To find out more about Salma here.
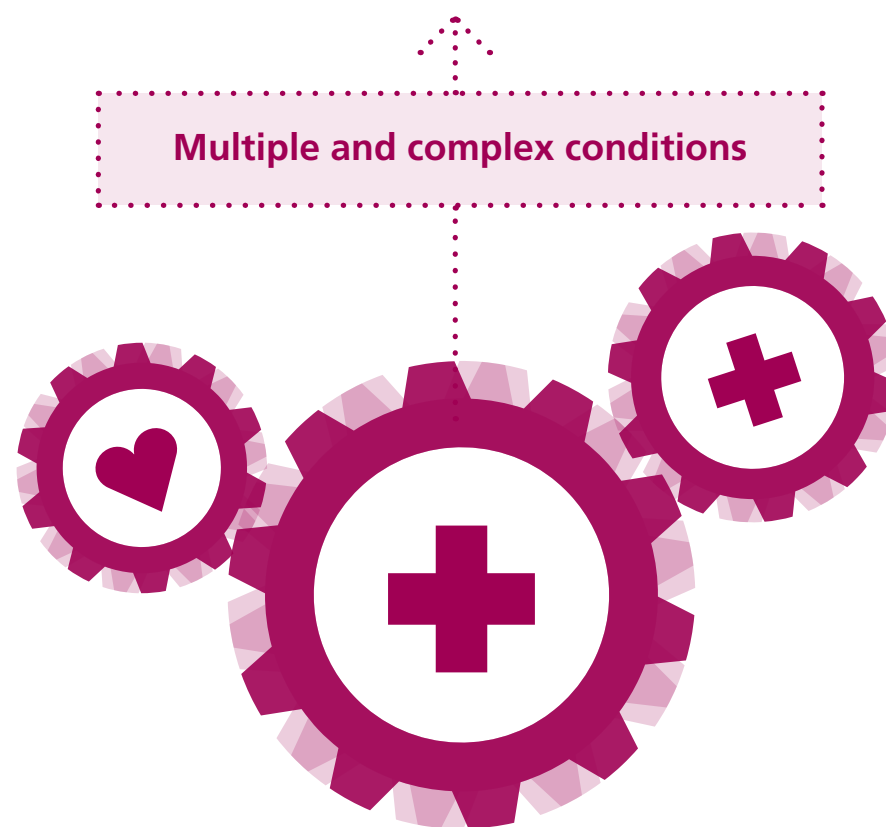
Bob has an **unhealthy lifestyle**, is obese, has diabetes and Chronic Obstructive Pulmonary disease (COPD) and suffers with periods of depression.

To find out more about Bob here.

Both people have multiple and complex conditions, but require a different response from our workforce.

Multiple and complex conditions

Key messages

The number of people with long-term conditions is expected to rise.

Cancer rates are set to increase, but more people are expected to live with rather than die of cancer.

The prevalence of diabetes is expected to rise.

The number of obese people is set to rise.

The number of people diagnosed and living with dementia is expected to rise.

More people will live with several co-existing conditions.

The number of people with learning disabilities is expected to rise.

Past and present

Over a quarter of the population (15.4 million) has a long term condition.

The mortality rate for cancer was 170 people per 100,000 in 2010.

There are an estimated 3.8 million people living with diabetes (approximately 90% of which is type 2).

26% of men and 24% of women are obese.

850,000 people live with dementia in the UK.

In 2008 1.9 million people had more than one condition.

Around 1.5 million people have a learning disability.

Forecast population trends

Projected to rise by 19% to 18m by 2025.

In 2030 mortality rates for cancer are expected to reduce further to around 142 per 100,000.

On current rates of obesity, levels of diabetes could rise to 4.9 million by 2035.

Obesity rates could reach 39% for men and 40% of women by 2035.

The overall number of people with dementia in the UK is predicted to rise to 1 million by 2021 and to over 2 million by 2051.

This has been projected to grow to 2.9 million by 2018.

This is projected to have risen by around one per cent per annum between 2008 and 2018

The challenges

If people are

living longer, with more individuals living with multiple and complex health conditions...

And staff are

currently predominantly trained to treat distinct and different diseases in isolation from each other, and only after a health 'crisis' has occurred...
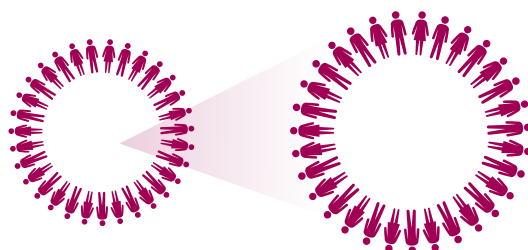
How do we

- educate and train our staff so that they can help prevent ill health where possible, and, where it isn't, support them to provide high- quality care for people with a range of physical and mental health and social care needs?

- educate and train our staff to work in a system that crosses traditional organisational boundaries that is centred around an individuals needs?

- ensure that they still have access to the highly specialist skills needed as part of the wider team?'

Informed people and patients of the future

People have an increasing appetite to be informed about health.

Technology is improving our capacity to meet that need, but we are leaving some people behind.

Past and Present

There are in excess of 165,000 available apps in the area of health. In 2016, 51% of the population have used the internet to find out information about health matters (up from 18% in 2007).
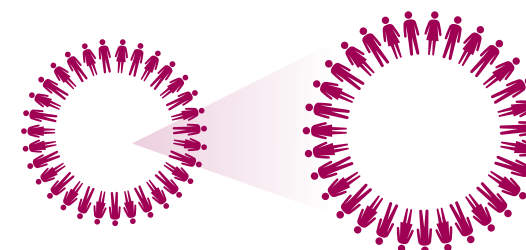
Visits to NHS Choices reached 583 million in 2015.

Past and Present

Only 29% of women over 65 from the most disadvantaged social group (DE) have access to the internet compared to 79% from the more socially advantaged AB group. 25% of disabled adults had never been online and of the 5.3 million adults who had never used the internet in 2016, just over half (2.8 million) were aged 75 and over.

Future Trends

One estimate puts the figure for the number of people in 2017 downloading apps at 1.7bn and the estimated value of the market in this area is thought to be able to reach over $100bn by 2022.
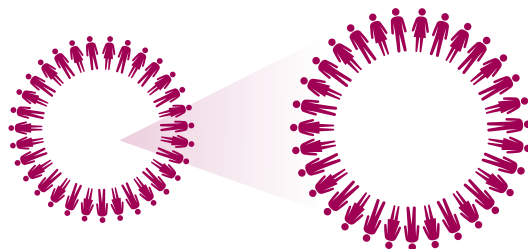
Future Trends

Even small improvements to digital skills and access for disadvantaged groups, the elderly and those with a long-term conditions could have a significant impact in terms of delivering savings, helping manage increasing demand and tackling health inequalities.

Informed people and patients of the future

More information does not always translate into changed behaviour; and some sections of society respond more readily than others.

A review by Durand et al (2014) demonstrates the beneficial impact of Shared Decision Making (SDM) interventions on disadvantaged groups, across various outcomes, and highlights the potential for SDM and related interventions to reduce health inequalities when the intervention is adapted to disadvantaged groups' needs. Clinicians should see SDM as an opportunity to include and empower those who are normally disengaged by using tools and processes that are simple and sufficiently accessible to benefit all groups, and particularly those who are traditionally marginalised.

Past and Present

For both men and women, the proportion consuming five or more portions per day increased from 2001 (when measurements started) reaching a peak in 2006 at around 28% for men and 32% for women. Consumption of fruit and vegetables rises with income levels. In 2013, these figures were 25% of men and 28% of women.

Future Trends

The trend suggests some improvement in the general population, but people with no qualifications are five times more likely to engage in three of the four key risk factors (smoking, drinking, diet, physical activity).

'Learning self-management was a revelation to me. It taught me to recognise the triggers and early warning signs that might precede an episode of illness, and what action to take in order to stop it in its tracks. I am now able to work, maintain and enjoy a healthy marriage with my wife and be a good father to my three children. My only regret about self-management is that I didn't discover it earlier.'
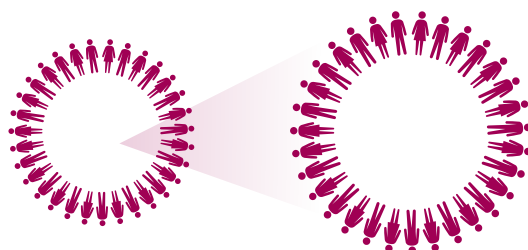
A person who uses mental health services, National Voices: National Voices' guide to care and support planning.

Active and engaged people and patients of the future

More patients want to be active and engaged in their own care.

KEY MESSAGE (ACTIVE AND ENGAGED):

But the appetite and capacity to be engaged is not equal across society.
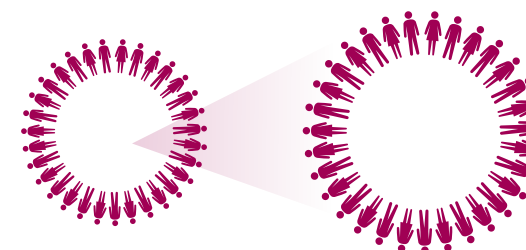
Past and Present

The most recent CQC adult inpatient survey showed 11% of respondents felt that they had not been sufficiently involved in decisions about their care and treatment (for people living with a mental health condition or who had a learning disability, these figures were higher, at 17% and 13% respectively).

Past and Present

Being informed is a pre-requisite to being engaged, so the clear age and class differentials in terms of access to the internet above will limit the potential for these groups to be engaged through the use of technology.

Future Trends

There is a growing consensus that more engaged patients lead to better outcomes and lower costs. Developing approaches such as 'People powered health' and 'Supported self-management' have the potential to deliver substantial savings. Evidence indicates a reduction of around 20% in A&E attendances, planned and unplanned admissions, and outpatient appointments, so we can expect this trend to grow as NHS England and others try to 'push' this model, with 'pull' from certain demographics.

Future Trends

There is a risk that the age and economic divide remains or even widens, resulting in an excluded group of patients who are not informed or engaged, whilst others increasingly reap the benefits of a new co-productive model of care.

Active and engaged people and patients of the future

Patient activation has been defined by Hibbard et al. as:

'Patients who are more knowledgeable, skilled and confident about managing their day-to-day health and healthcare.'

The challenges

If some people are

more informed, active and engaged in their own health, leading to better outcomes...

But other people are

not as able to access and/or understand the information and/or be actively engaged (as people have different levels of health literacy and capacity to learn), thereby having poorer health and outcomes...

How do we

- educate and train our staff so that they can respond to the full spectrum of needs in society, able to meet the demands of fully informed and engaged patients and support and advise patients and carers who are not informed or active, whether by choice or exclusion due to lack of capacity?

- ensure that those who are least able to take advantage of developments in technology are not disadvantaged by these advances?

Members of communities of health

'Ultimately, in order to really make a difference in improving our nation's health, concerted action will be required, with individuals, families, local communities, local councils, the NHS and government all taking responsibility and working together towards a healthier population.'

Duncan Selbie, Chief Executive, Public Health England.

When we talk of healthcare, we tend to do so in terms of a relationship between two people: a patient and a professional, often a doctor, with the patient seeking advice and help from the clinical expert.

However, this is an incomplete and simplistic picture. First, this implicit (bio-medical) model fails to recognise the broader context. For example, the patient may have a genetic condition that means that the needs of their family are also relevant, or they may have mental health and/or social problems, which require their healthcare should be considered more holistically. Second, patients increasingly bring their own expertise or knowledge to the conversation with the professional: they may have sought advice and information from other sources, whether from family, friends or online.

The professional is providing one input from amongst many into the decision that the patient will ultimately make about their care, and may be just one of many formal and informal providers that the patient is relying upon to manage their own health.
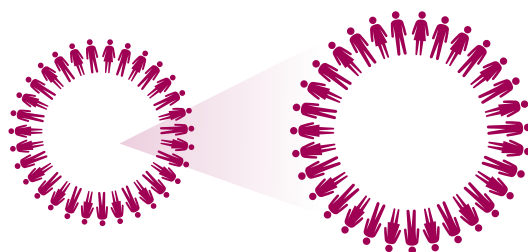
We therefore need to radically re-think the whole notion of 'patient' and 'professional' and the nature of the relationship between them.

Members of communities of health

There will be a blurring of roles between patients and professionals, some of whom will require a more co-productive model of care.

Patients will receive support from a wider 'community of health' (family, friends, fellow sufferers) as well as paid professionals.
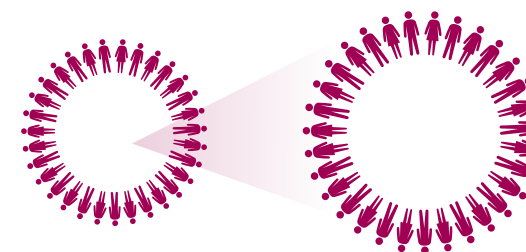
Past and Present

Historically the patient/professional relationship has been determined by an asymmetry of information. However, access to information is becoming available to an increasing proportion of the population. In 2016, 41.8 million adults (82%) in Britain accessed the internet every day, compared with 16.2 million (35%) in 2006. 51% of all adults had used the Internet to find health information online; among those aged 25 to 44 the rate of use increased to nearly 7 in 10.

Past and Present

3 in 5 people will be carers at some point in their lives.

58% of carers are female and 42% are male.

6.5 million people in the UK are carers and this number continues to rise.

Future Trends

Although a significant proportion of the population may still seek and require a traditional paternalistic/bio-medical model of care, in which the clinician is viewed as the expert and single diseases are viewed in isolation.

Future Trends

Likely to increase both because of 'pull' from some sections of society and 'push' from governments who want better outcomes for lower cost.

Carers UK estimates that we will see a 40% rise in the number of carers needed by 2037 - an extra 2.6 million carers, meaning the carer population in the UK will reach 9 million.

Members of communities of health

But some patients may be stranded 'on islands', cut off from both virtual (information/tech) and real communities of health.

We may move away from the false distinction between mental and physical wellbeing.
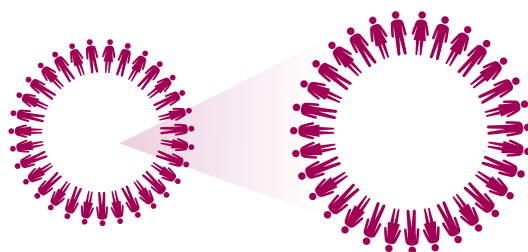
Past and Present

1/3 of people with dementia live alone.

11% of households have no access to the internet. This increases to 53% where someone over 65 is living alone.

53% of people with dementia felt depressed or anxious recently and 29% do not feel part of their community.

Future Trends

Without targeted programmes to close the gap between those in communities of health and those who are stranded, the problem could grow.

Past and Present

For those living with Common Mental Disorders (CMDs) recent evidence shows that for those people who have severe symptoms over a third of this group were also living with a chronic physical condition.

Future Trends

Overall, the evidence suggests that at least 30% of all people with a long-term condition also have a mental health problem. By interacting with and exacerbating physical illness, co-morbid mental health problems raise total healthcare costs by at least 45% for each person with a long-term condition and co-morbid mental health problem.

The challenges

If some people are

members of communities of health, increasingly seeking a co-productive model of care...

And staff are

trained in the bio-medical model, which views single diseases in individual patients with the professional as the expert...

How do we

educate and train our staff in a more holistic model of healthcare, able to contribute positively to a co-productive model of care, whilst also able to identify and support patients who are isolated, not connected to the internet or communities?

Summary of key drivers and future patients

Drivers of change

Expectations of patients and staff.

Demographic pressures (increase in population numbers and life span).

Rapid growth in technology.

Social/political/economic issues challenging concepts of individual/collective responsibility.

Service models of integrated care with more care provided outside hospitals.

Patients of the future

People with multiple and complex conditions.

Informed, active and/or engaged.

Members of a community of health, which includes, but is not exclusive to, the formal workforce and recognises and promotes wellness.

Individuals occupy different places on the health and engagement spectrum.

So what kind of workforce will be required if we are to respond to the drivers of change and meet the predicted needs of future patients?

Part 3

The Future Workforce

Introduction

HEE currently commissions several £bn worth of investments (see p6) in education and training programmes. We have over 50,000 doctors in training. Our historic lens on the workforce has been through the numbers of registered professions (supply) rather than the eye of the patient (the skills, values and behaviours a person needs to help them reach and maintain wellness).

Our pen portraits - We have devised seven 'pen portraits' of care givers of the future and you can read more about Ashraf, Rashmi, Rosie, Michael, Joan, Jamie and Chantelle by clicking here.

NHS Digital Workforce Census published March 2016

1.3 million NHS Workforce, of which in NHS Trusts and CCGs (Headcount) there are:

Other groups of staff including GPs and ALB staff.

Around 617,000 professionally qualified clinical staff, of which:

NUMBER OF STAFF 000s

111,000 are Doctors

340,000 are Nurses, Midwives and Health Visitors

147,000 Scientific, Therapeutic and Technical staff

182,000 Infrastructure Support staff

19,000 Ambulance staff

350,000 Clinical Support staff

Introduction

Our current approach to planning (driven largely by supply-side issues) will not produce a workforce fit for the future needs of patients. The annual workforce planning process drives us to ask how many of which type of profession do we need, constrained by existing professional groupings and largely focussed on numbers.

Framework 15 allows us to stand back, consider the key drivers of change and the likely characteristics of future patients, and ask ourselves a more fundamental question:

What are the high-level characteristics of the future workforce that will be required to meet the anticipated needs of people and patients today and in the future?

The five characteristics set out here provide a direction of travel to inform our priorities for future investment. They do not address in detail the differences within and between the 300+ different professions and staff groups, which make up our formal workforce as a whole.

The characteristics of the future workforce

The 'workforce' will...

1 include the informal support that helps people prevent ill health and manage their own care as appropriate.

2 have the skills, values and behaviours required to provide co-productive and traditional models of care as appropriate.

3 have adaptable skills responsive to evidence and innovation to enable 'whole person' care, with specialisation driven by patient rather than professional needs.

4 have the skills, values, behaviours and support to provide safe, high- quality care wherever and whenever the patient is, at all times and in all settings.

5 deliver the NHS Constitution: be able to bring the highest levels of knowledge and skill at times of basic human need when care and compassion are what matters most.

Informal and formal care

When we talk about 'the workforce' we are usually referring to the formal, paid workforce. But in addition to people employed by the NHS and other organisations, there is an army of individuals caring for themselves and each other.

1

The 'workforce' will include the informal support that helps people prevent ill health and manage their own care as appropriate.

1.3M NHS STAFF

THIRD SECTOR

PRIVATE SECTOR

1.55M ADULT SOCIAL CARE JOBS

THE FUTURE

£

BELOW THE RADAR

RISING TRENDS

There are 6.5M UK Carers

3M volunteers in health and disability organisations

Individuals using apps and the internet to prevent and manage ill-health
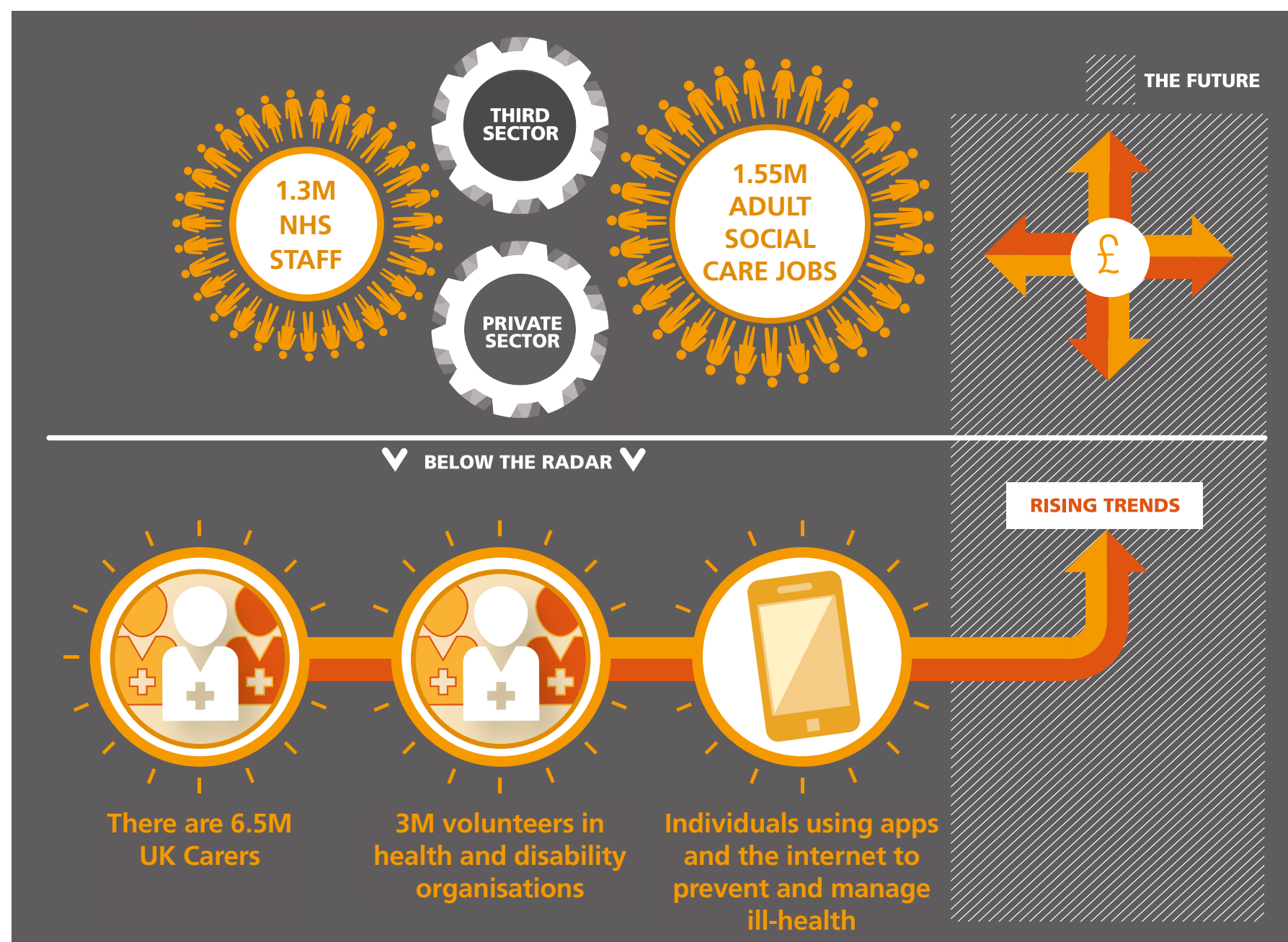
Informal and formal care

In the section on people and patients of the future, we proposed that we need to start thinking about patients as 'members of a community of health', where qualified/paid staff may be one of, 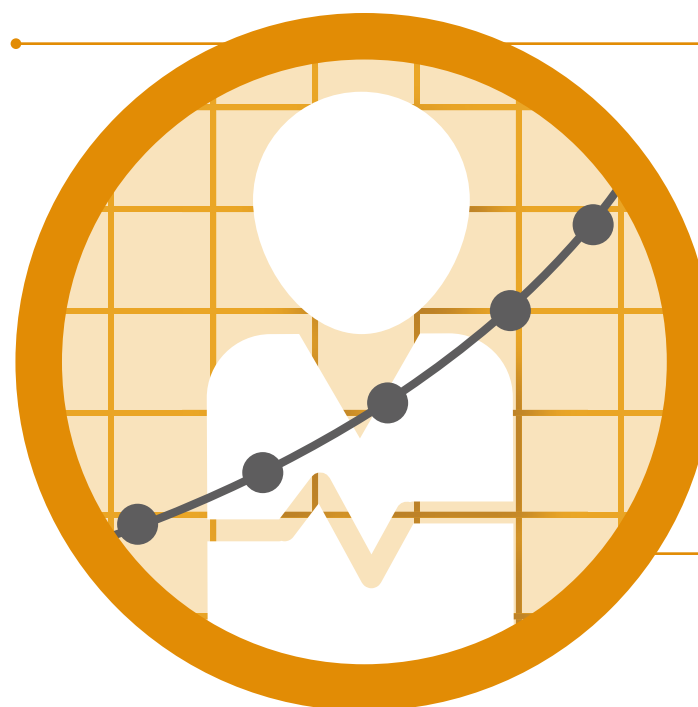rather than the sole source of, advice and support to a person. This can be illustrated by considering the case of Salma.

FORMAL SUPPORT

Macmillan Cancer Nurse available for support.

Annual check-up with Oncologist.

Six-month check-ups with GP to manage cardiovascular risk.

Dementia managed by GP.

INFORMAL SUPPORT

Ongoing support from Breast Cancer women's group (face-to-face).

Member of online community sharing the latest on managing cardiovascular health.

Husband Mohammed provides day-to-day caring for dementia.

Neighbour provides respite care.

Sister helps when urgent/crisis.

Salma has a healthy lifestyle, is a survivor of cancer, (2.5 million people in the UK now live with a cancer diagnosis). She has high cholesterol and manages it with statins and has early onset dementia.

To read more about Salma, please click here.

1

The 'workforce' will include the informal support that helps people prevent ill health and manage their own care as appropriate.

Push and pull factors

This trend is likely to increase because of 'pull' and 'push' factors.

Push
driven by health service

Shifting care out of hospitals into the home: over half of women now leave hospital within a day of giving birth, compared to just a fifth in 1989-1990; The day case rate (the proportion of total elective admissions that were day cases) was 82% in September of 2016/17 compared to 66% in 1999-2000.

Development of alternative sources of health advice such as NHS Choices and schemes such as 'Dementia Friends', where people are trained to recognise and respond to the symptoms of dementia.

Future declining role of the state in meeting health and social care needs?

Pull
driven by patients

Over a quarter of the population now have a Long-term condition (LTC). More and more people have multiple LTCs: this was projected to rise from 1.9 million in 2008 to 2.9 million in 2018. There is a major mismatch between people's preferences for where they would like to die and their actual place of death: 70% of people would prefer to die at home, yet around 50% currently die in hospital.

In 2007, approximately 18% of adults used the internet to access health information and by 2016, this had risen to 51%; among those aged 25 to 44 the rate of use increased to nearly 7 in 10.

Over 165,000 health apps are now available. One estimate puts the figure for the number of people in 2017 downloading apps at 1.7bn and the estimated value of the market in this area is thought to be able to reach over $100bn by 2022.

In the future some sections of society may prefer relying on their family and community for some support and care.

1

The 'workforce' will include the informal support that helps people prevent ill health and manage their own care as appropriate.

Costs and benefits

We know from studies that helping people to help themselves may lead to fewer crises and inpatient admissions for some conditions, whilst others have estimated that for every £100 spent on encouraging self care, around £150 worth of benefits could be delivered in return. The care provided unpaid, by the nation's carers is worth an estimated £132bn per year – broadly equivalent to the total spending on the NHS.

'There are numerous different people involved in my brother and I's care. We are fortunate that we have an excellent Respiratory Nurse Specialist at our local hospital who tries to coordinate the care. However, it is still often our Mum who arranges appointments and chases up results. Many families are not as fortunate to have a Mum that doesn't have to work full time and is able to do this role'

A person with Primary Ciliary Dyskinesia, National Voices: National Voices' guide to care and support planning

1

The 'workforce' will include the informal support that helps people prevent ill health and manage their own care as appropriate.

If a person with a long-term condition sees health professionals for a total of two hours in any one year, it leaves a total of 8,758 hours where they are managing their own care.

We also know that we are not supporting carers to support their family and friends: 29% of carers say that they don't have enough time to focus on their own health, with 58% stating that they did not have support to help them manage with health and wellbeing. This is all the more important when considering that yet other survey data from another study shows a higher likelihood for carers to be living with arthritis, higher blood pressure, long term back problems, diabetes, mobility problems, anxiety and depression. A survey of cancer carers, showed that 45% of respondents who carry out healthcare related tasks such as infection control and changing dressings, said they had not received any training from healthcare professionals on how to carry these out.

Caring can have a profound effect on people's lives and finances. Figures show that 3 million people have reduced their working hours as a result of their caring responsibilities, with 2 million having given up working altogether. Out of the estimated 6.5 million carers in the UK, an estimated 10% care for someone living with dementia.

So if people and their families are

increasingly providing more 'informal' caring and support roles for patients...

And staff are

increasingly likely to be a member of a wider community of health that supports an individual patient...

Then how do we

- support individual patients and their carers to manage their own health where appropriate?
- support our staff to see themselves as part of a wider community of health, and to enable them to add the most value where appropriate?

1

The 'workforce' will include the informal support that helps people prevent ill health and manage their own care as appropriate.

Co-production and traditional care

The evidence from our section on the 'future patient' suggests that some people are becoming more informed, active and engaged in their own healthcare (although this trend is not equally distributed across society).

This will require the future workforce to employ a range of techniques and draw upon different models of care, rather than just the traditional model currently dominant.

There is a growing consensus amongst health researchers that we need to move towards a co-productive model of health. However, as we have shown, we must be flexible in our approach as different patients will have different capacities, needs and preferences. It is also the case that co-production is not appropriate in all circumstances: even a highly engaged patient will not expect a co-productive model in the event of a car crash.

'There has been a cultural and professional change in attitude, mindset and behaviour...when I did my training as a clinician some years ago, it was very much the professional who knew best, knew most, led the conversation. Now the person, patient, service user knows best and often they lead the relationship and that conversation.'

Paul Morrin, Director, Leeds Community Healthcare Trust.

2

The 'workforce' will have the skills, values and behaviours required to provide co-productive and traditional models of care as appropriate.

Co-production and traditional care

The following is a crude characterisation of the different models of care that can underpin the relationship between professionals and patients, either implicitly or explicitly:

Traditional model	Co-productive model of care
Perceives users as 'deficits' with needs and lacking in knowledge.	Defines users as assets with skills to offer.
Seeks to provide expert help and advice to the recipient.	Seeks to share power to plan and deliver support together.
Preserves a hierarchical distinction between professionals and users.	Seeks to break down the division between service providers and users, recognising that both have vital contributions to make.
Treats the patient/professional relationship as a binary/ transactional one.	Treats the patient/professional relationship as one amongst many within a wider community of health.

2

The 'workforce' will have the skills, values and behaviours required to provide co-productive and traditional models of care as appropriate.

Pen portrait

'The GP consultation of the future will need to be much more adaptable.'

Redefining Consultations, NESTA 2013

Rashmi, a GP, has two patients with diabetes. She will need a broad range of skills to be able to respond to different people with the same clinical condition.

2

The 'workforce' will have the skills, values and behaviours required to provide co-productive and traditional models of care as appropriate.

Bob is a 60-year-old man with Type 2 diabetes.

He wants to manage his condition with medication. He is not very interested in self-management, and prefers regular appointments with his doctor. He finds these visits reassuring.

Rashmi spends more time with Bob interpreting blood tests, and giving advice on Bob's medication.
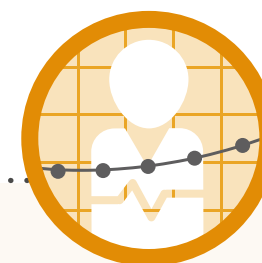
Andrew is a 60-year-old man with Type 2 diabetes.

He wants to manage his condition with lifestyle changes.

He is very interested in self-management. He supports other patients over the internet.

Andrew downloads his own blood test results, and Rashmi is only alerted if they are abnormal. She emails Andrew regularly and provides encouragement. Andrew sends Rashmi details of clinical trials she may find interesting.

To read more about Rashmi, Bob or Andrew please click <u>here</u>.

The challenges

So if some people are

more likely to engage in co-productive models of care, whilst others may lack the capacity or prefer a more traditional approach...

And staff are

required to respond to both types of patients and all of the individual permutations in between...

Then how do we

equip our staff with the skills, values, behaviours and support to provide a safe, high-quality service to every individual and to meet the needs of people who lack the capacity to engage in co-production model who often are the people who could gain the most from the approach and have the greatest needs?

To find out more please click here to read about Ashraf.

2

The 'workforce' will have the skills, values and behaviours required to provide co-productive and traditional models of care as appropriate.

Whole person care

Historically the way in which we have planned, commissioned, run and regulated our education and training programmes has encouraged a trend towards ever greater specialisation.

Of course we need specialists, but we must take care to ensure our future workforce continues to maintain a degree of generalism and adaptability, able to respond to and adopt the latest research and innovation that could benefit patients as well as promote more rewarding careers.

The Five Year Forward View confirms the commitment of the NHS to having boards and leadership which are reflective of the communities we serve. The Workforce Race Equality standard is providing us with the necessary information to support fair treatment of our BME staff, helping to support patient care and innovation in the NHS.

'Generalists are the undervalued champions of the acute hospital service.'

Royal College of Physicians

There are over **350** different roles in healthcare.

There are over **60** different medical specialties.

3

The 'workforce' will have adaptable skills responsive to evidence and innovation to enable 'whole person' care, with specialisation driven by patient rather than professional needs.

Pen portrait

The current approach will not meet the needs of the 'future patient' who is likely to have more multiple and complex conditions.

The current model is also unsatisfying for the staff who only see their 'bit' of the person, and ultimately does not maximise the opportunities to improve the patient's overall health and wellbeing. Wherever possible, we should seek to reduce the number of specialists an individual patient is required to see.

3

The 'workforce' will have adaptable skills responsive to evidence and innovation to enable 'whole person' care, with specialisation driven by patient rather than professional needs.
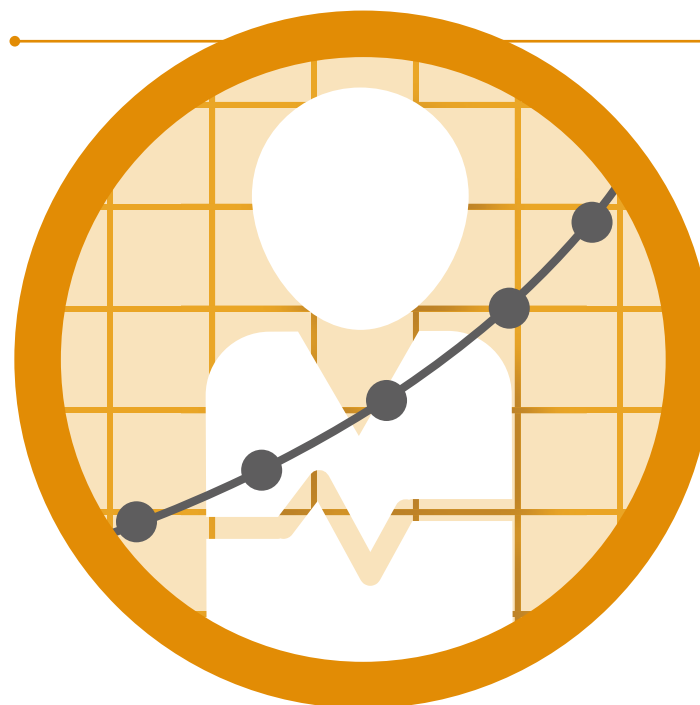
Bob has an unhealthy life style, is obese, with diabetes and Chronic Obstructive Pulmonary Disease (COPD).

Bob will need to be treated by a variety of different professionals, including: his GP, practice nurse, cardiologist, respiratory and sleep counsellor and a therapist.

To find out more, please click here to read about Bob.

'When you have a long term and complex health problem, you often have to manage your interactions with your healthcare professionals. Often you find yourself repeating your symptoms, test results, etc. over and over again to different care professionals and sometimes several within the same appointment.'
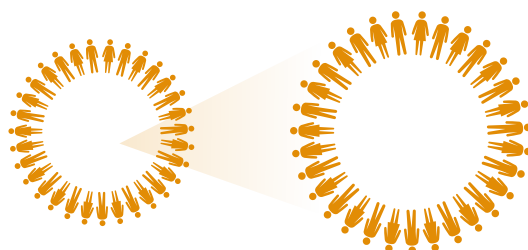
A person with a long-term condition, National Voices: National Voices' guide to care and support planning.

Whole person care

We will need greater flexibility of roles.

And greater flexibility within career paths.

Past and Present

The majority of medical and dental roles defined by disease/organ specialism. This is less true of other professions, such as art therapists, but, according to the GMC, the UK has more specialisms than other countries.
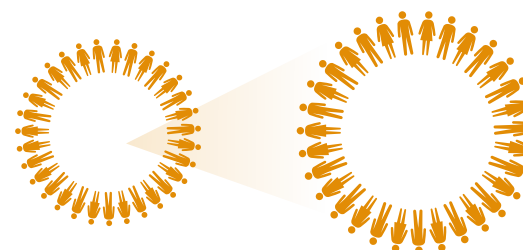
Past and Present

Single track career pathways, with few opportunities to diversify without going back to the beginning of the education and training path.

Forecast Population Trends

Roles increasingly defined and commissioned around the needs of patients, with a more appropriate balance between generalists and specialists.

Future Trends

Broader based training with generic based competencies, which feeds multiple professions and facilitates change within careers.

Whole person care

With more flexibility for individuals.

Past and Present

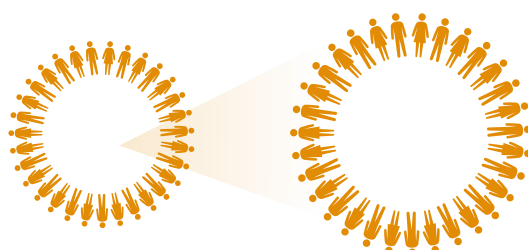In medicine, individuals choose a specialism and develop their career within this specialism. Non-medical staff may choose a profession and specialise later.

Forecast Population Trends

Individuals supported to be more flexible throughout their career, open to innovation and change, broadening rather than just deepening knowledge.

The current approach is also likely to be increasingly unsatisfactory for our future staff, who at just 18 or 21 years old may choose a particular profession or specialism, which may not provide them with sufficient core skills to allow them to provide high-quality care for the next 45 years.

'Learning and training will become of even greater importance as the population ages. Learning throughout our lifetimes will help us to participate for longer in the labour market, build personal and mental resilience and bring health and wellbeing benefits. Lifelong learning brings benefits to individuals, employers and wider society that will be increasingly valuable in an ageing population. Despite this, participation in adult education and training has fallen in recent years.'

Government Office of Science, Future of an Ageing population, 2016 p7

To find out more, please click here to read about Rosie.

The challenges

So if people are

increasingly developing more multiple and complex conditions and requiring a more 'whole person' approach to care...

And staff are

trained in particular professions or specialisms, with limited opportunity for career or skills flexibility...

Then how do we

- develop a more flexible workforce that has more generic skills so that more staff are better able to respond to the needs of patients.

- ensure a more appropriate balance between generalists and specialists without losing sight of the importance of specialism in medicine?

3

The 'workforce' will have adaptable skills responsive to evidence and innovation to enable 'whole person' care, with specialisation driven by patient rather than professional needs.

Care wherever and whenever patients need it

We know from both current patterns of demand and our work on the 'future patient' that people are increasingly likely to require better access to high-quality healthcare, at any time and in any place. This will be driven in part by increasing consumerism, but more importantly, as the evidence of the variation in quality of care becomes more transparent.

However, ensuring we deliver high-quality care at all times in all settings will require us to address key tensions we identified in the drivers of change section (expectations). This means we need to fundamentally rethink and reform how we recruit, educate and train and support our workforce.

Wider Geography

One year survival rates for cancer are over 10% higher in some CCG areas than in others.
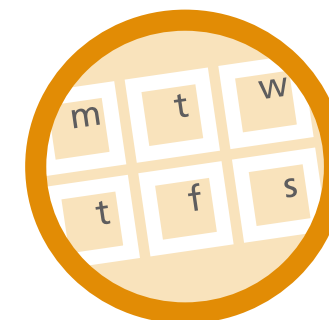
Place

Staff in hospices were most likely to be rated as always showing dignity and respect to the patient in the last 3 months of life (87% for hospice doctors and 86% for hospice nurses) compared with 60% for hospital doctors and 54% for hospital nurses.
National Bereavement Survey

4

The 'workforce' will have the skills, values, behaviours and support to provide safe, high-quality care wherever and whenever the patient is, at all times and in all settings.

'I don't like the concept of having to go into a home as an alternative. I don't like that at all. I would hate to leave this little flat and I would do anything to organise help to be able to stay and I think a lot of people would be far happier if that was so.'

A person with a long-term condition, National Voices: National Voices' guide to care and support planning

Pen portrait

Michael is a newly qualified nurse. Currently, the skills required of him depend on the setting in which he works. Going forward, Michael needs the skills and support to provide high- quality care in either setting.

4

The 'workforce' will have the skills, values, behaviours and support to provide safe, high-quality care wherever and whenever the patient is, at all times and in all settings.

In a hospital setting, Michael will be working in a professional environment helping to care for a ward full of vulnerable older people with support and challenge from his nursing colleagues, and other professions and staff groups such as Allied Health Professionals. His work is structured and monitored, and mentoring is readily available.
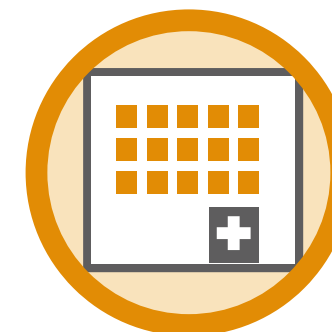
In a home setting, Michael is working in a private, domestic space, looking after a vulnerable older person with the support of his/her immediate carers. His work may be less structured, with supervision, mentoring and support from other professions less readily available and distributed across different employers. Access to excellent IT is vital.

In their response to the HEE Strategic Intent call for evidence Marie Curie stated that: 'To enable more people to die in the community rather than in hospital, staff from voluntary sector organisations providing NHS community-based services will need to be trained and developed to the same high standards as their colleagues and peers within the wider NHS. A key challenge will be to reach staff across all relevant organisations, many of which will be small independent charities.'

To find out more, please click here to read about Michael.

The challenges

In order to ensure we have staff with the right skills, values and behaviours we will need to change the way we recruit, educate and support our staff.

From	To
Recruitment: Some staff groups working Monday to Friday with hours outside this being treated as 'out of hours' whilst others are expected to work shifts.	An explicit expectation that all staff will work flexibly across different times of the day/week.
Education and Training: Students trained in predominantly hospital settings (for some professions).	Educated and trained in all settings with IT skills to enable effective working.
Support: Little flexibility for work/life balance and poor IT systems.	21st century working practices that facilitate desirable work/life balance.

4

The 'workforce' will have the skills, values, behaviours and support to provide safe, high-quality care wherever and whenever the patient is, at all times and in all settings.

The challenges

So if people are

likely to require more care closer to home and/or in a variety of different settings...

And staff are

predominantly trained around current organisational structures of care...

Then how do we

educate and train staff in a range of skills to support self-management, shared decision making, and care and support planning so that they can work flexibly across a range of settings to reflect changing patient needs and service provision throughout their careers?

To find out more please click here to read about Joan.

4

The 'workforce' will have the skills, values, behaviours and support to provide safe, high-quality care wherever and whenever the patient is, at all times and in all settings.

Knowledge, skill and compassion

Our analysis of the Global Drivers of Change reveals the extent to which developments in research and technology could disrupt future models of care, but our ability to respond to these opportunities will depend in part on the capacity of our staff. In a review of barriers to innovation in the NHS by the Young Foundation (2011), one of the key themes that emerged was the need to increase training, education and staff development in this area.

Some have predicted that the development of genomics will lead to a paradigm shift from a model based upon 'diagnose and treat' to 'predict and prevent'. But for this to be realised, all healthcare professionals – not just geneticists – will need to recognise where bio-informatics may be of use, understand how to interpret and communicate the results and to advise on what if any actions may be relevant in response to the results.

At the same time, we must not forget that the provision of healthcare is ultimately a human endeavour. A study of what patients most value in hospital care found that confidence and trust in providers, and treatment with respect and dignity, are as important to patients' evaluations of their hospital experience as technical expertise.

5

The 'workforce' will deliver the NHS Constitution: be able to bring the highest levels of knowledge and skill at times of basic human need when care and compassion are what matters most.

Knowledge, skill and compassion

Information will increasingly become the currency of healthcare in the future, and our ability to access, understand and interpret it at individual and population level will be a key determinant in the future success of our healthcare system.

Our staff will need excellent information and IT skills to enable them to work across domestic and professional settings and beyond organisational and institutional boundaries. This will be important in supporting the work of the Local Digital Roadmaps (LDRs).

'While there is great enthusiasm for using 'big data' to develop personalised approaches for individual patients ('precision medicine'), provide customised decision support to both clinicians and patients, and create 'learning healthcare systems', today all these goals are more promise than reality. Realising the potential will depend on significant changes through the entire system: changing incentives, far better interoperability, more meaningful data, the availability of analysts with skills in genomics, IT, clinical medicine, and more.'

National Advisory Group on Health Information Technology in England, Making IT work: harnessing the power of health information technology to improve care in England, 2016 p22

5

The 'workforce' will deliver the NHS Constitution: be able to bring the highest levels of knowledge and skill at times of basic human need when care and compassion are what matters most.

It is estimated that the NHS in England currently employs over 30,000 staff working in an informatics area, yet we do not currently plan for or develop this crucial professional role, where there is a global, competitive market for their skill, however the independent report of the National Advisory Group on Health Information Technology in England has identified a general lack of workforce capacity amongst the informatics workforce group, both clinical and non clinical.

Knowledge, skill and compassion

But although some things may change beyond recognition in the next 15 years, the desire for care and compassion will remain the same.

What Will Change	What Will Remain
Innovations in information and technology will radically alter how we predict, prevent, diagnose, manage and cure disease, requiring changes in how we educate, train, employ and deploy our staff.	People will be born, have periods of wellness and ill-health, suffer sudden death or prolonged demise; individuals and their loved ones will have periods of deep anxiety, fear, relief and grief, seeking care and compassion from others throughout their lives.

5

The 'workforce' will deliver the NHS Constitution: be able to bring the highest levels of knowledge and skill at times of basic human need when care and compassion are what matters most.

Knowledge, skill and compassion

This particular characteristic is derived from the NHS Constitution, which recognises that our workforce needs both to have high degrees of technological literacy and to be capable of providing compassionate care. Indeed, as the Lancet acknowledges, healthcare professionals can provide a unique link between technology and care.

'Health Professionals are the service providers who link people to technology, information, and knowledge. They are also caregivers, communicators and educators, team members, managers, leaders and policy makers. As knowledge brokers, health workers are the human face of the health system.'

'Health professionals for a new century.' The Lancet (2010)

5

The 'workforce' will deliver the NHS Constitution: be able to bring the highest levels of knowledge and skill at times of basic human need when care and compassion are what matters most.

The challenges

So if

patients have the potential to benefit from the latest information, technology and innovations...

And staff are

not yet systematically supported in having access to the latest informatics, genetics and the capacity to understand them...

Then how do we

ensure our staff have the skills to deliver 21st century care whilst also supporting them to live the values set out in the NHS Constitution?

5

The 'workforce' will deliver the NHS Constitution: be able to bring the highest levels of knowledge and skill at times of basic human need when care and compassion are what matters most.

To find out more please click here to read about Chantelle.

Resources

Factsheets →

Pen Portrait Download Bank

CLICK ON AN ARROW TO VIEW A PORTRAIT

VIEW ANDREW'S PEN PORTRAIT

VIEW ASHRAF'S PEN PORTRAIT

VIEW BOB'S PEN PORTRAIT

VIEW CHANTELLE'S PEN PORTRAIT

VIEW GEMMA'S PEN PORTRAIT

VIEW JAMIES'S PEN PORTRAIT

VIEW JOAN'S PEN PORTRAIT

VIEW MICHAEL'S PEN PORTRAIT

VIEW RASHMI'S PEN PORTRAIT

VIEW ROSIE'S PEN PORTRAIT

VIEW SALMA'S PEN PORTRAIT

CARE GIVER

JAMIE

Jamie is 30 years old and is training to be a physiotherapist at Keele University. He is due to qualify in 2018.

Jamie's passion when he is not studying are music and films and he has a vast collection of both music tracks and films stored digitally. He can access these from wherever he is either at home, whilst travelling, or at his friends' homes.

Jamie's sister lives in Australia but he keeps in regular contact with her using Skype. He likes to look after himself and keep healthy. He has downloaded various apps to help him do this – these include monitoring his alcohol levels, his sleep and the amounts of calories he burns up whilst exercising.

PEOPLE & PATIENTS

ANDREW

Andrew is a 27–year-old man who lives in the heart of London. He is single and runs his own business. He has an active lifestyle and loves going to the theatre and playing golf.

Andrew has been diagnosed with type 2 diabetes and has chosen to manage his diabetes through lifestyle changes. He completed a DAFNE course, which taught him how to manage his condition. He now monitors his blood glucose levels regularly, is an active online patient and welcomes opportunities to discuss his progress with the GP as an equal. Andrew has recently had a health scare. He self checks and noticed a mole on his arm had changed in its appearance. He looked on the internet and went promptly to the GP and has been diagnosed with skin cancer.

CARE GIVER

ASHRAF

45-year-old Ashraf left his job as an IT project worker a year ago to be a full time carer for his Dad with dementia.

Whilst caring for his Dad, Ashraf reached out for support from the Alzheimer's society and became involved with helping them raise awareness of dementia. He is a dementia friend and helps the Alzheimer's society provide training for service industries, such as front line bank staff, so they can become more aware of the illness and how they can support their customers.

Ashraf's Dad sadly passed away recently and he now wants to use the skills and knowledge he has learnt about dementia whilst caring for his dad to help other carers and dementia patients.

How can we make it easier for people like Ashraf who have the values and behaviours and experience of care to embark on a career in healthcare?

PEOPLE & PATIENTS

BOB

Bob is a 50-year-old man who lives in Nottingham on his own. He is divorced with two grown up children. He has an unhealthy lifestyle, is obese, has diabetes and Chronic Obstructive Pulmonary Disease (COPD). He works on a local building site and spends most of his spare time in the local Working Men's Club.

He lacks the confidence to self-manage and is happy to take medication and have regular check-ups with the doctor. He doesn't see why he should do more, as 'that is what doctors are for. They are the professionals.' He does not use the internet, so relies on his GP to access and explain information to him.

Bob often has periods of feeling very depressed and self medicates with alcohol rather than going to see his GP or talking to friends.

CARE GIVER

CHANTELLE

Chantelle is 17-years-old and is a single mother who lives in a flat in Manchester with her nine-month-old daughter and two younger brothers. Her mother recently died from a drug overdose and now Chantelle is bringing up her child and her brothers. With the help of her grandma to look after the children she has managed to find a job working in the local pizza take away.

Chantelle left school at 16 as she was pregnant and has no qualifications but would really like to have a career and her goal is to become an arts therapist working with families in the community. She became very familiar with the work of therapy services as they looked after her mother before she died.

How can we widen participation so people like Chantelle can access our training programmes?

How can we support people to work and study part time?

We are one of the largest employers in Europe; what difference are we making to reducing health inequalities?

GEMMA

Gemma is 8-years-old. She lives in Cornwall on a farm a 20-mile drive from the nearest village with her parents and two older teenage twin brothers. Gemma has a learning disability, an Autistic Spectrum Disorder (ASD) and has a statement of educational needs. She also has a sight impairment.

Gemma loves to feed the animals on the farm and often roams out on her own to be with the animals, which frequently results in her having accidents. Given the distance from the local hospital and the potential seriousness of her injuries, which are hard to assess as Gemma finds it hard to communicate, the family rely heavily on the ambulance service including the air ambulance.

Gemma and her Mum and Dad have many meetings with different people who seem to ask the same questions. She receives support from: her local Child & Adolescent Mental Health (CAMHS) team; regular visits to her GP to review her medication; the local education authority and special needs coordinator; the educational psychologist; the Special Education Needs Co-ordinator (SENCO) at her school: and the speech therapist. Visits to the occupational therapist (OT) have just begun.

CARE GIVER

JOAN

Joan has retired from her role as a practice nurse in a small but busy GP practice in the village where she lives in a rural area. She was finding balancing the needs of her job and caring for her son who has disabilities was becoming too much of a strain.

Joan has felt quite depressed since leaving her job and misses her colleagues at the practice as well as the patients she has cared for in the community where she lives. It would suit her lifestyle and carer responsibility to work in the evenings and weekends when her husband is not at work and he is able to look after their son. This would suit the practice as they are looking to offer out-of-hours clinics to patients and on Saturdays.

How can we best use the skills and experience of people like Joan who have left the NHS, encouraging them to return?

Are we promoting and making the most of part time and flexible working opportunities that meet both patient and staff expectations?

CARE GIVER

MICHAEL

Michael is 35 years old and lives with his partner in the South West. He is about to complete his nurse training and is making the decision about where he wants to work.

His aunt, previously a nurse, has advised him to start his career in a hospital to 'get a good grounding', but he really enjoyed his placement in a nursing home. Michael's university tutor discusses his career choices with him and although they agree that Michael has enough flexible skills to be able to adapt to whichever setting he chooses to work in, the system probably isn't set up well enough yet for him to get the support and guidance that he needs this early in his career in a nursing home.

If high-quality services are to be offered across all settings, staff will need to be able to adapt to working wherever services need to be delivered. As we recruit more people for values and they develop more flexible skills, the choices that they want to make about their future role might change.

How can we make early career choices available for people based on their values and where they want to work, rather than everyone feeling they should start their career in a hospital?

How can we make it easier for healthcare professionals to work in whatever setting is necessary to meet patient needs?

CARE GIVER

RASHMI

Rashmi started working as a GP 10 years ago. The practice where she works serves a population covering both rural and urban areas with a mixed economy of small affluent areas together with large areas of high social deprivation. The patients registered with the practice therefore come from a range of different societal backgrounds and have different levels of capacity about health and wellbeing issues.

Rashmi has a special interest in diabetes and has undertaken further training to increase her knowledge and skills in this area. She does a lot of work with Diabetes UK and this has helped her to understand the different needs of diabetes patients not only from a medical perspective but how they behave differently in their approach to self-management. She finds this insight particularly helpful given the range of backgrounds her patients are from and the different behaviours she observes.

How do we equip staff to deal with different models of care to suit the different needs of patients?

CARE GIVER

ROSIE

Rosie is a 30-year-old doctor. She is currently training to be a consultant radiologist. Five years into her specialist training, Rosie begins to have doubts about her career.

She thinks that general practice might offer a better quality of life for her and her family. She is very reluctant, however, to make this change – it would mean restarting her specialist training from the beginning. Rather than do this, she considers leaving medicine altogether. Some of her friends in other professions have made similar career changes, and this was easy for them to do.

Many of those in the workforce will change career direction at least three times. The idea of people wanting a job for life is, perhaps, becoming outdated.

How can we make careers that require a highly specialist skill (such as medical specialities) more flexible for healthcare professionals?

How can we make it easier for doctors to move into those specialties (like general practice) which must expand to meet patient needs?

SALMA

Salma is a 75-year-old woman who lives in the suburbs of York. She is married and has two daughters and five grandchildren. Salma has always looked after herself and has a healthy lifestyle, she eats a balanced diet and is a member of her local sports club.

Salma had breast cancer (BRCA1) eight years ago, which came as a shock given her healthy lifestyle. She made a full recovery and is now even more determined to look after herself. She has enlisted the help of her grandchildren to help her choose a tablet, use the internet and downloaded apps so she can find out as much information as possible on what actions she can take to help herself and stay well. Salma found the help and support she got from other cancer sufferers really made a difference to coping with her cancer treatments and regimes, and now volunteers at a cancer support group to help others. Salma's knowledge about cancer is extensive and she has explained to her two daughters about the genetic risk her type of cancer brings and that they can have tests to see if they have the relevant gene. One daughter had a test that was positive and she decided to have a mastectomy, the other daughter would rather not know and will not take the test. Salma has been told that she has increased cardiovascular risk and actively manages this with statins. Salma has just been diagnosed with early onset dementia.

Term	Definition
Allied Health Professionals/ AHPs	As key members of today's healthcare team, AHPs provide treatment that helps transform people's lives. https://www.healthcareers.nhs.uk/explore-roles/allied-health-professionals
Arms-length bodies (ALBs)	Arm's length bodies deliver many key public services and provide essential specialist advice to Government. https://www.gov.uk/government/publications/arms-length-bodies/our-arms-length-bodies
Carers	We understand this term to mean unpaid carers, but we are aware that other organisations use other terms such as unsalaried carers.
Care Quality Commission (CQC)	The independent regulator of health and social care in England. http://www.cqc.org.uk/
Clinical Commissioning Groups	Most of the NHS commissioning budget is now managed by 211 clinical commissioning groups (CCGs). These are groups of general practices which come together in each area to commission the best services for their patients and population. https://www.england.nhs.uk/commissioning/
Commissioners / Commissioning	Commissioning is the process of planning, agreeing and monitoring services, ranging from the health-needs assessment for a population, through the clinically based design of patient pathways, to service specification and contract negotiation or procurement, with continuous quality assessment. https://www.england.nhs.uk/commissioning/
Continuing Professional Development	Continuing Professional Development - Continuing professional development (CPD) is the way professionals continue to learn and develop throughout their careers so they keep their skills and knowledge up to date and are able to work safely, legally and effectively. https://www.healthcareers.nhs.uk/i-am/working-health/professional-development
Co-production	Co-production is a term that refers to a way of working whereby decision-makers and citizens, or service providers and users, work together to create a decision or a service which works for them all. The approach is value-driven and built on the principle that those who are affected by a service are best placed to help design it. http://www.institute.nhs.uk/share_and_network/pen/co-production.html

Term	Definition
E-learning	E-learning (or eLearning) is the use of electronic media and information and communication technologies (ICT) in education.
Genome sequencing	Genome sequencing supports patient diagnosis and treatment based on information about a person's entire DNA sequence, or 'genome' and is becoming part of mainstream healthcare practice. Increased knowledge and better use of genomic technologies and genetic data will form the basis for a reclassification of disease, with important implications both for predicting natural history and for identifying more effective therapies. https://www.gov.uk/government/publications/genomic-technology-in-healthcare-building-on-our-inheritance
GMC	The General Medical Council (GMC) registers doctors to practise medicine in the UK. http://www.gmc-uk.org/
Higher Education Institutions (HEIs)	Higher education courses and qualifications are delivered through a wide variety of institutions, mostly universities and colleges. They are collectively referred to as 'higher education institutions' (HEIs). http://www.hefce.ac.uk/about/unicoll/
IMF	International Monetary Fund http://www.imf.org/external/index.htm
Long-term condition (LTC)	A long-term condition is a health problem that can't be cured but can be controlled by medication or other therapies. Long term conditions can affect many parts of a person's life, from their ability to work and have relationships to housing and education opportunities. https://www.england.nhs.uk/ourwork/ltc-op-eolc/
Medicines and Healthcare Products Regulatory Agency (MHRA)	The Medicines and Healthcare Products Regulatory Agency (MHRA) is responsible for regulating all medicines and medical devices in the UK by ensuring they work and are acceptably safe. The MHRA is an executive agency of the Department of Health. https://www.gov.uk/government/organisations/medicines-and-healthcare-products-regulatory-agency/about

Term	Definition
Nano-based drug delivery systems	Nanoparticles are extremely small. When used as drug delivery they usually consist of different biodegradable materials such as natural or synthetic polymers, lipids, or metals. Nanoparticles are taken up by cells more efficiently than larger micro-molecules and therefore, can be used as effective transport and delivery systems for drugs in the body. http://www.occup-med.com/content/2/1/16
National Institute for Health and Care Excellence (NICE)	The National Institute for Health and Care Excellence (NICE) provides national guidance and advice to improve health and social care. https://www.nice.org.uk/about
NESTA	Nesta is an innovation charity with a mission to help people and organisations bring great ideas to life. http://www.nesta.org.uk/about-us
NHS England (NHSE)	NHS England (NHSE) works with NHS staff, patients, stakeholders and the public to improve the health outcomes for people in England. https://www.england.nhs.uk/
ONS / Office for National Statistics	The Office for National Statistics (ONS) is the UK's largest independent producer of official statistics and is the recognised national statistical institute for the UK. It is responsible for collecting and publishing statistics related to the economy, population and society at national, regional and local levels. https://www.ons.gov.uk/aboutus
Organisation for Economic Co-operation and Development (OECD)	The mission of the Organisation for Economic Co-operation and Development (OECD) is to promote policies that will improve the economic and social well-being of people around the world. http://www.oecd.org/about/
Patients	Where the term patient is used, this also refers to citizens and clients.
Public Health England (PHE)	PHE is an executive agency of the Department of Health with a mission is to protect and improve the nation's health and to address inequalities. https://www.gov.uk/government/organisations/public-health-england

Term	Definition
Purchasing power parities (PPPs)	Purchasing power parities (PPPs) are the rates of currency conversion that equalise the purchasing power of different currencies by eliminating the differences in price levels between countries. In their simplest form, PPPs are simply price relatives which show the ratio of the prices in national currencies of the same good or service in different countries. https://stats.oecd.org/glossary/detail.asp?ID=2205
Stakeholder	A person, group or organisation that has interest in the work of Health Education England.
Third sector / Voluntary sector organisations	The voluntary sector or third sector (also non-profit sector or "not-for-profit" sector) is the sphere of social activity undertaken by organizations that are not for profit and non-governmental.
World Health Organisation (WHO)	The World Health Organisation (WHO) is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends. http://www.who.int/about/en/