

Summary of the key strategic issues that will shape healthcare over the next 20 years

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Background

The NHS has seen unparalleled levels of growth in funding in recent years. However, the consequences of the recent financial crisis and economic downturn mean that the health system will have to live within tightened financial constraints.

In the longer-term, spending pressures are likely to continue, driven by increasing costs, an ageing population and rising expectations. Based on national statistics population projections more than one in five people will be over-65 by 2030. Decisions made now and in the near future can shape the health service for many years to come.

The objective of the project is to understand how we can maintain the principle of universal health service, free at the point of use. The first phase of this project is to develop an understanding of the key strategic trends impacting on health, and from these, develop a number of scenarios that describe how the NHS could look in the future.

Project Outline

Phase 1

Undertake a literature search and series of interviews to compile a list of key issues and trends that will impact on healthcare over the next 20 years

Phase 2

Develop a number of high level scenarios that describe a range of possible futures for healthcare in 20 years ([This event - 30th September 2011](#))

Phase 3.

Refine the descriptions from phase 2 by considering the impact on a number of different services through engagement with clinicians and other stakeholders

Phase 4

Present to Ministers and the newly established commissioning board, to help shape the development of the commissioning strategy.

Introduction to this pack

This slide pack is a summary of key trends that will impact on healthcare over the next 20 years. Its purpose is to facilitate the development of a number of health scenarios, which is an important stage of this project.

The findings are drawn from a number of independent documents and experts in their fields. Some of the documents are already a synthesis of the key trends that will impact on healthcare in the future. Therefore, this slide pack represents a form of “meta- analysis”, triangulating the opinion of numerous researchers and experts.

From these trends and issues, a number have been chosen to construct a framework for the discussions on the 30th September (See slide 45). However, it is expected that participants will reflect all the material in this slide pack during the development of the scenario descriptions as well as their own personal expertise and experience.

Introduction continued and acknowledgments

For convenience, the key trends have been listed under the familiar “PEST” framework, which is routinely used by organisations to describe the **P**olitical, **E**conomic, **S**ocial and **T**echnological aspect of the environment they operate within.

Many colleagues and organisations have contributed to this compilation of analysis, but in particular I would like to acknowledge the help received from:

Dr Jennifer Dixon and the Nuffield Trust for undertaking the initial literature review,

Dr Natalie-Jane Macdonald, Medical Director, BUPA, for sharing their own research in this field. This review was undertaken by Mr Tim Bolderson of “Outsights” who has continued to provide assistance with the piece of work,

Professor James Barlow, Imperial College Business School for his summary of the major innovation and technological advances in health and social care, and on-going support and advice.

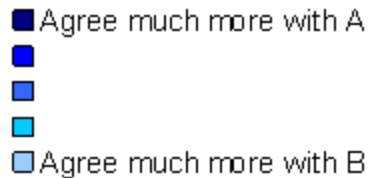


 **POLITICAL**

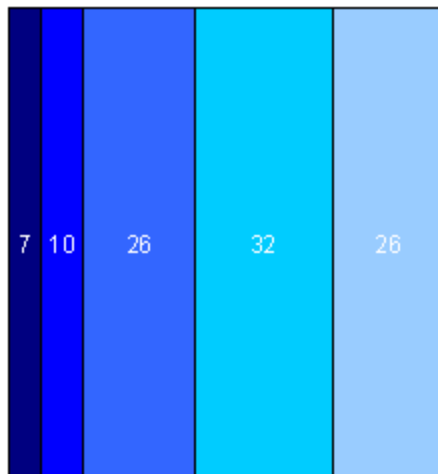
Political – Increasingly devolved decision making and more active participation in public services

Involvement in public services

Please read each pair of statements and decide which comes closer to your own opinion



The experts who provide and manage public services know best – they should find out what we think and get on with it



The general public should be much more actively involved in shaping public services e.g. through people deciding on services

Devolved decision making

Devolved government in Wales, Scotland and Northern Ireland. National Policy e.g. Open Public Services and “Big Society” aim to transfer power from central government to local people

More active participation

New technology e.g. blogs and social networking offer the potential for mass engagement and participation – as seen in the US election. Active citizenship and grassroots engagement, e.g. in voluntary organisations.



Political – Increasing choice and competition in health and care markets

Incremental increase in competition

Expansion of non-NHS provision in healthcare, through the current health and care reforms but not reversed. Builds on trend of Foundation Trusts and encouraging Social Enterprises.

Globalisation of health and care markets

Internationally a trend to more choice and competition in health and care. Growing opportunities on international health and care markets, in developing countries. Total value of the global health market is estimated at \$4 trillion.

EU moving into direct healthcare policy

From Directives that indirectly affected healthcare, such as the EWTD, to the consideration of Directives on immunisation and pharmaceutical pricing. Cross-border Directive permits access to any member state health provision, within certain limitations

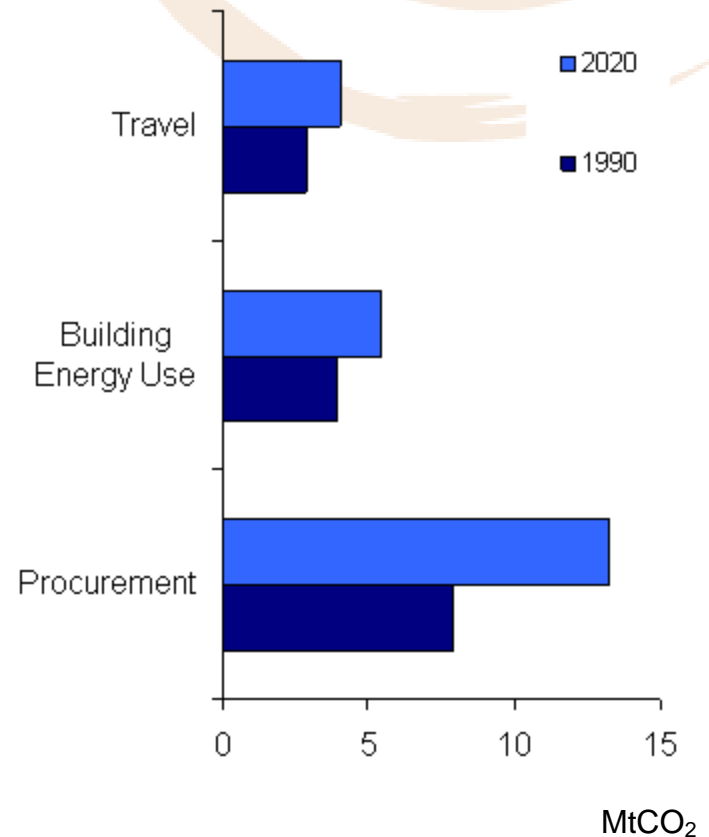
Political – Growing importance of environmental sustainability, which could impact on health and care

Environmental sustainability in health and care

Potentially large impact on health services across a range of issues, for example:

- **Infrastructure** – energy efficiency challenge for types of infrastructure, such as the older hospital buildings
- **Waste disposal** – of hazardous chemicals, bio-hazards and pharmaceuticals
- **Packaging and manufacturing** – of new technologies and new pharmaceuticals

Projected NHS emissions by sector



Source: NHS sustainable Development Unit



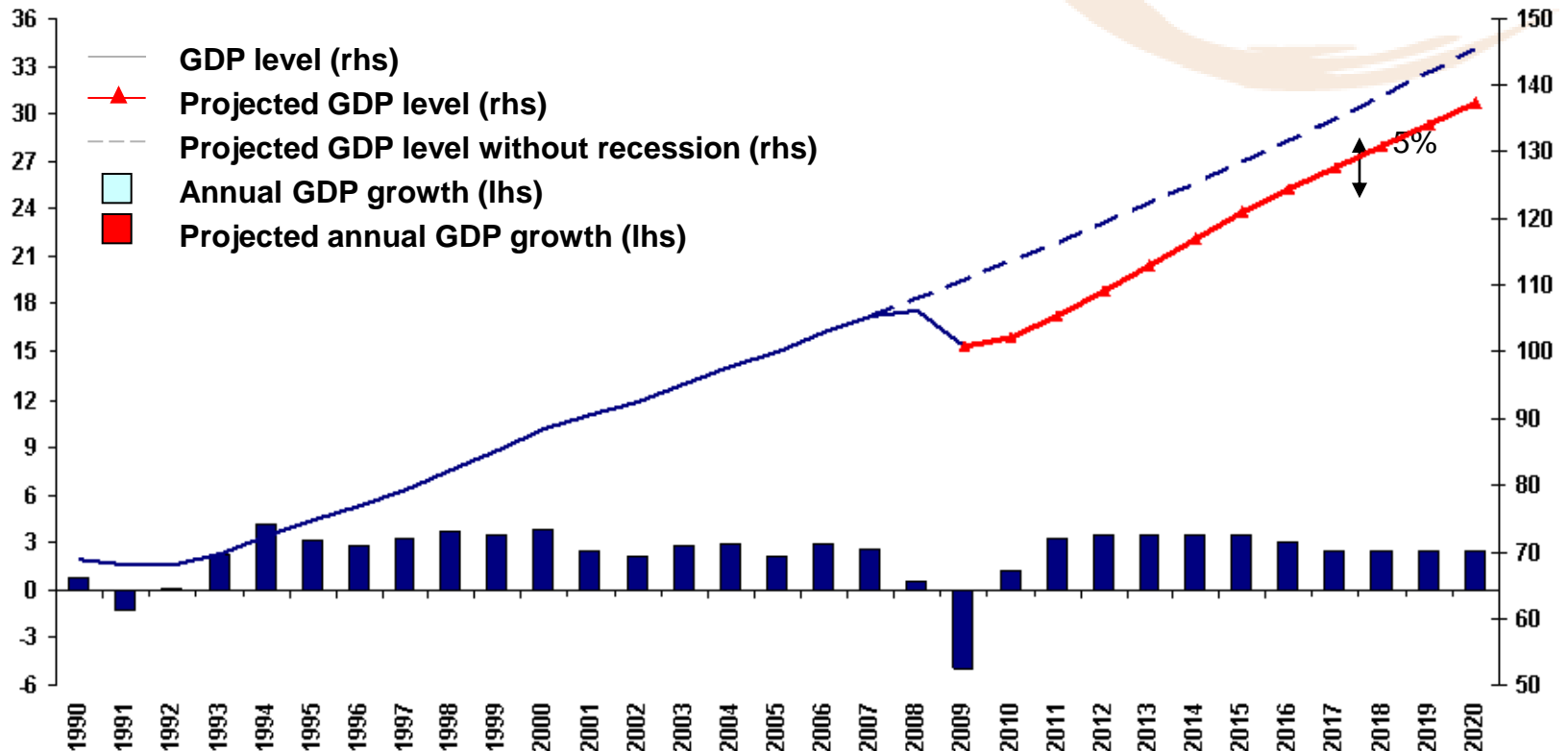
 **ECONOMIC**

Economic – Financial crisis caused temporary contraction of the economy but also a permanent loss of output

Projected GDP level and growth

Percentage change

Level, 2005 = 100



Source: GDP to 2009, ONS; GDP projection 2010-12, HMT; GDP projections 2013-2020, based on returning GDP to HMT estimate of trend i.e. 2.5% p.a. with a 5.25% loss of economic potential



Economic – Slow recovery may have an impact on health and on health behaviours

Protracted slow economic recovery may constrain changes to public health behaviours

Some evidence alcohol consumption has fallen, but smoking rates remain largely unaffected by the recession.

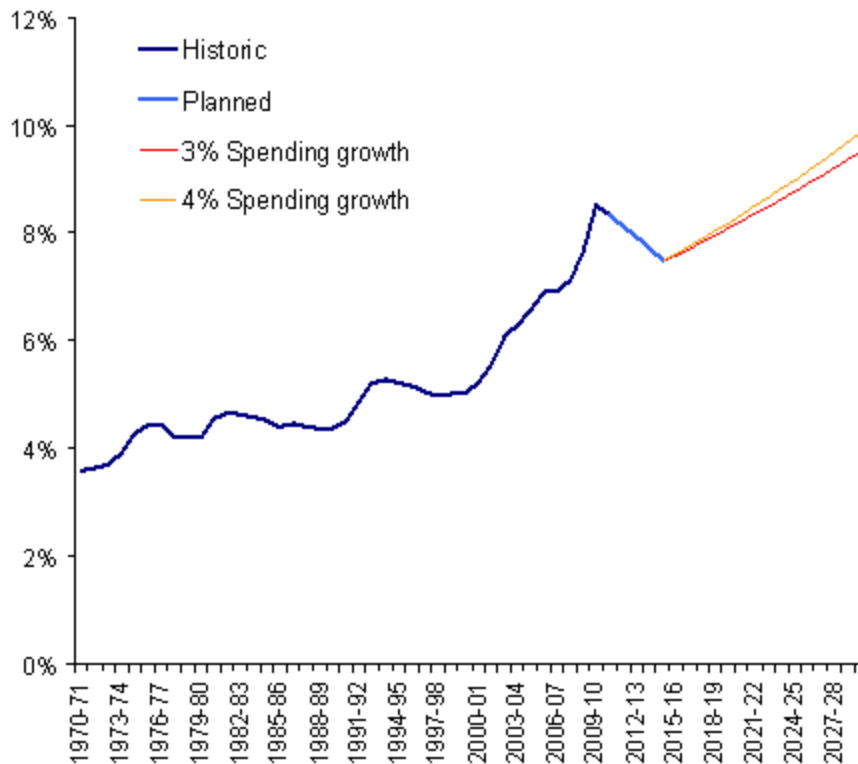
Economic downturn also associated with physical and mental health

Evidence that work tends to be associated with better physical and mental health – conversely, there is a strong association between unemployment and poor health. Unemployment tends to be associated with:

- Higher mortality
- Poorer general health, long-standing illness, limiting longstanding illness
- Poorer mental health, psychological distress, minor psychological/psychiatric morbidity
- Higher medical consultation, medication consumption and hospital admission rates.

Economic – On health, based on past trends, NHS spending set to reach over 9% of GDP by 2030

NHS Spending as a Proportion of GDP



Source: IFS, HMT, projections

Proportion of income spend on health projected to rise

If past trends continue, the proportion of GDP spent on healthcare is expected to rise, with the rate of growth partly determined by people's attitude towards their own health. Also reflects changing expectations and technological advances e.g. new drugs and procedures

Trends set to continue over the longer term

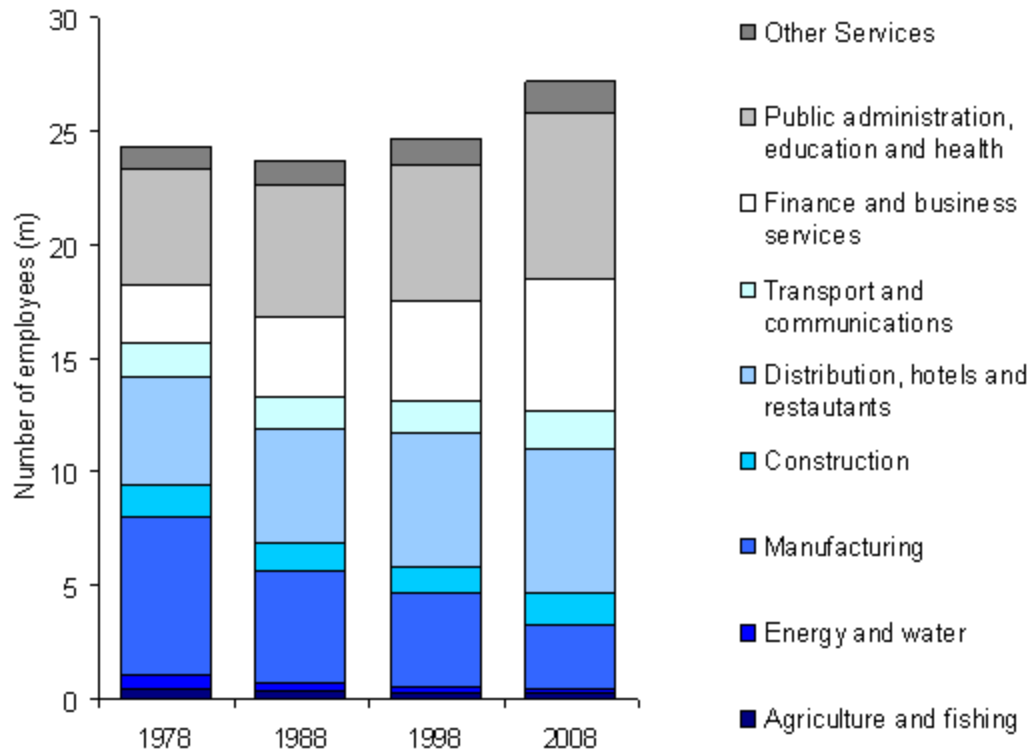
It is predicted by some commentators that by 2050, many countries will be spending around 20% of GDP on healthcare

Economic – Structure of the economy has changed over the last 30 years, with strong growth on the service sector

Changing structure of the UK economy

Since the 1970s manufacturing employed fewer people, while growth has come from finance and business services

Number of Employees by Sector



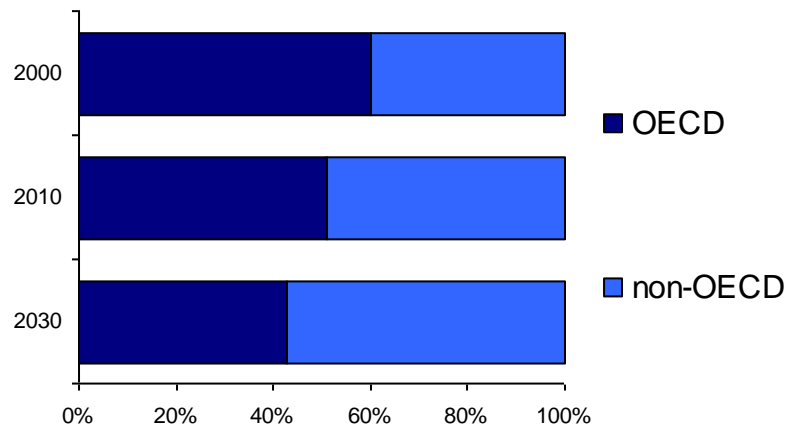
Source: ONS

Economic – Developing economies may undercut previous areas of UK dominance, but also provide opportunities for growth

Globalisation of markets

Increased world trade, and competition from new economic players like the BRIC countries – by 2020, China and India will be the 2nd and 6th largest global economies respectively, and by 2030, 90% of the world's labour force will live in the developing world. Changes may result on increased specialisation and requiring new skills and flexibility in the workforce

Share of World Economic Output

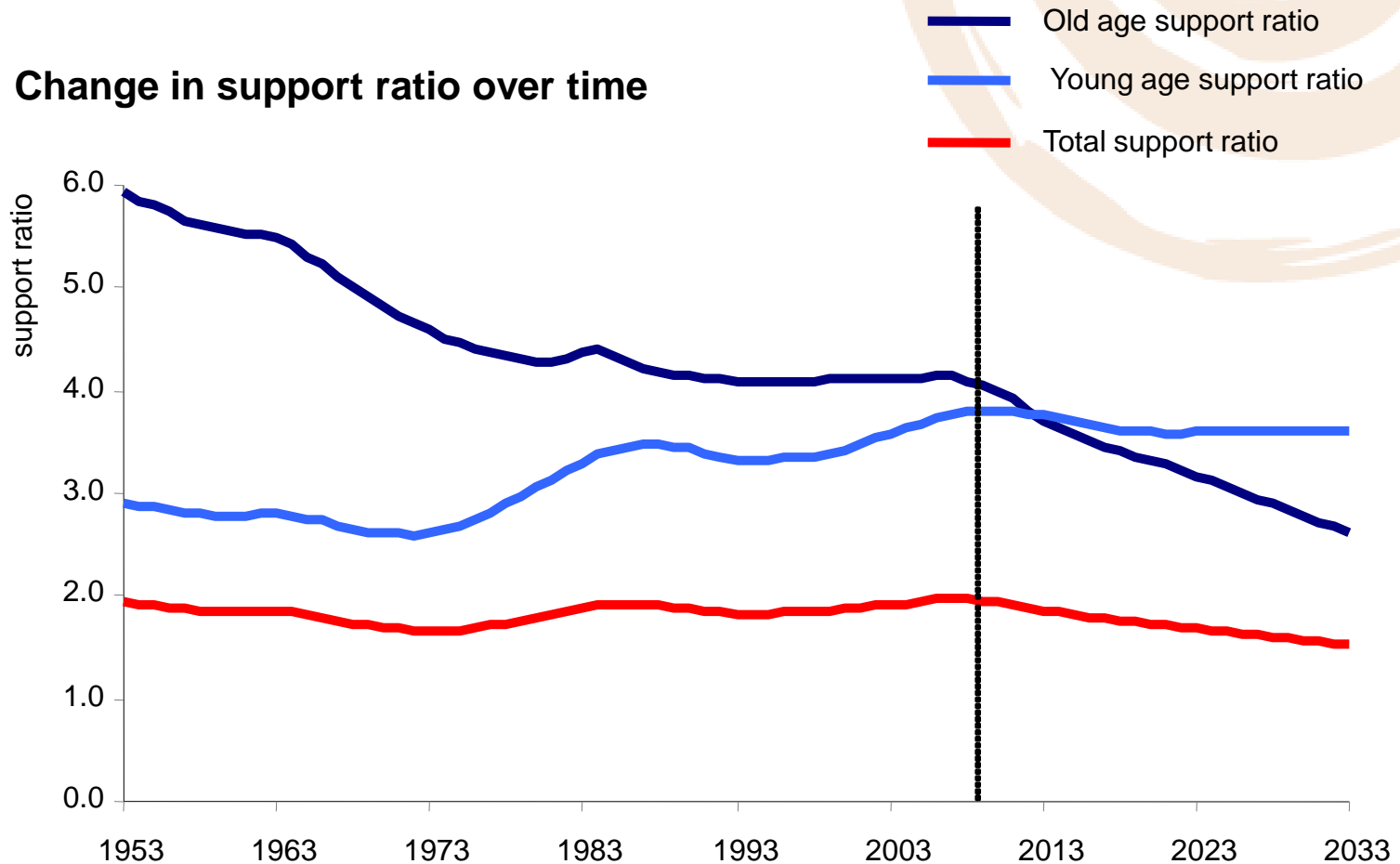


Changing patterns of Wealth

Longer-term forecasts suggest that today's developing and emerging countries are likely to account for nearly 60% of world GDP by 2030

Economic – Ageing population will the workforce as by 2033 fewer than three working age adults for every person over 65

Change in support ratio over time

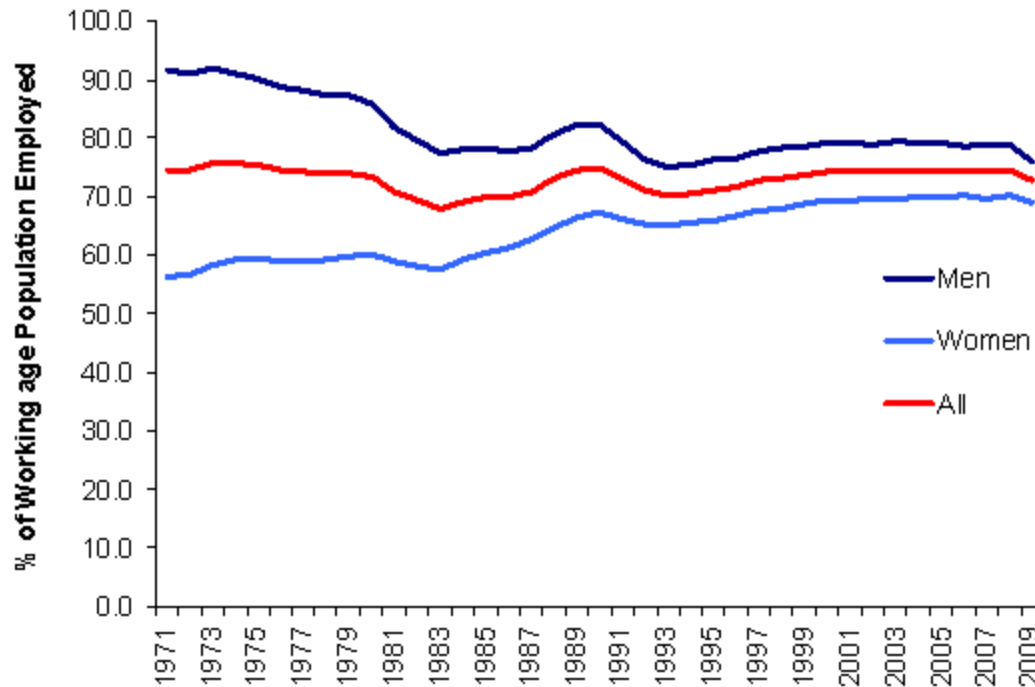


Old age support ratio = No. of 15-64s for each 65+
Young age support ratio = No. of 15-64s for each 0-14

Source: ONS

Economic – Since the early 1970s, there has been convergence in the employment rates between men and women

Employment Rate by Gender

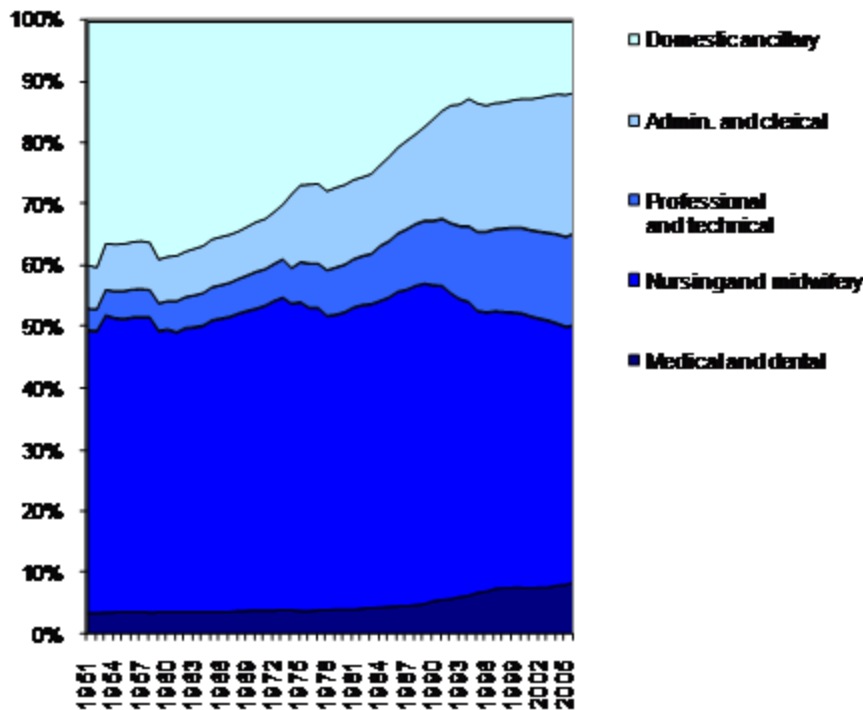


Changing structure of the workforce

Employment rate has grown by over 12 percentage points for women – and fallen by over 15 percentage point for men

Economic – There have also been changes to the health care workforce, with increasing numbers of doctors and some evidence of increased diversity

Proportion of Staff employed in the NHS by type



Source: OHE; NHS Information Centre

Changing structure of the health care workforce

Since 1951, medical workforce has grown by from 4% to over 10% of the workforce in 2010, while nursing and midwifery makes up a smaller share. However, we still have fewer doctors and more nurses than the international average.

Gender of workforce has also changed

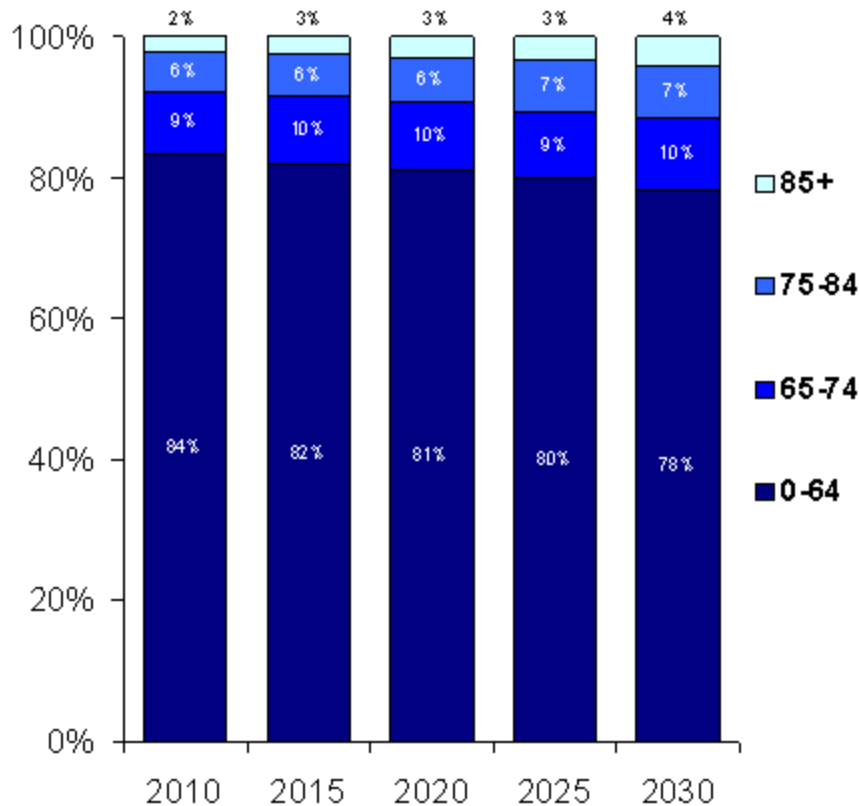
Over last five years proportion of female hospitals doctors has grown from to 36% to 41%.



 **SOCIAL**

Social – Over the next 20 years, we expect over 65-year old people make up a larger proportion of the population

Proportion of total population by age group



Source: ONS population projections

Ageing Population

The number of people over 65 is expected to increase to over 20% by 2030

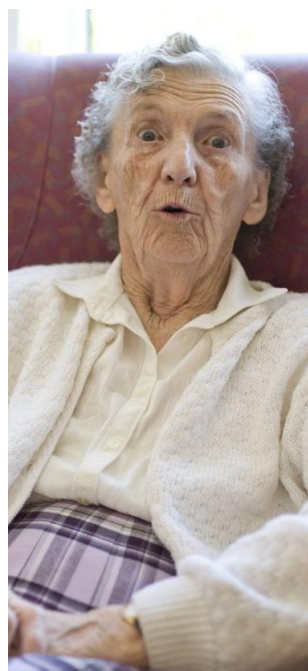
Fast increases in older age groups

The proportion of over 85 year olds will double over the next 20 years, but still remain a minority of population

The next slide illustrates this in more detail.....

.....Mrs Smith is 75 and frail with complex needs.

- At 75, she is likely to live for a further 12 years (OECD)
- Most likely lives alone and is a widow (60% single habitation, 61% chance of being a widow for women over 75 in 2006)*
- Mrs Smith's average expenditure was £218 per week, of which almost 40% was spent on food, energy bills, housing and council tax (2007)*
- Her median weekly income was £179 (Age Concern key facts 2008)
- Had a 75% chance of voting in the last general election (people over 65)



- Will live on average 10 years of her life with a limiting illness or disability (2004)*
- Has a 70% chance of having a longstanding illness and a 50% chance of it limiting her ability to carry out daily activities (2006)*
- Has a 23% chance of having 2+ long-term conditions and a 17% chance of having 3+ LTCs (HSE 1997)
- Has a 25% chance of having a mental health problem (Age Concern, Health Survey 2005 data for 65+)
- Has a 20% chance of developing dementia (Dementia UK, 2007)
- Has a 32-42% of falling this year (National Clinical Audit of Falls and Bone Health in Older people, Royal College of Physicians)

* ONS

Even using Long Term Conditions as a proxy...we do not have reliable data on how large Mrs Smith's cohort is

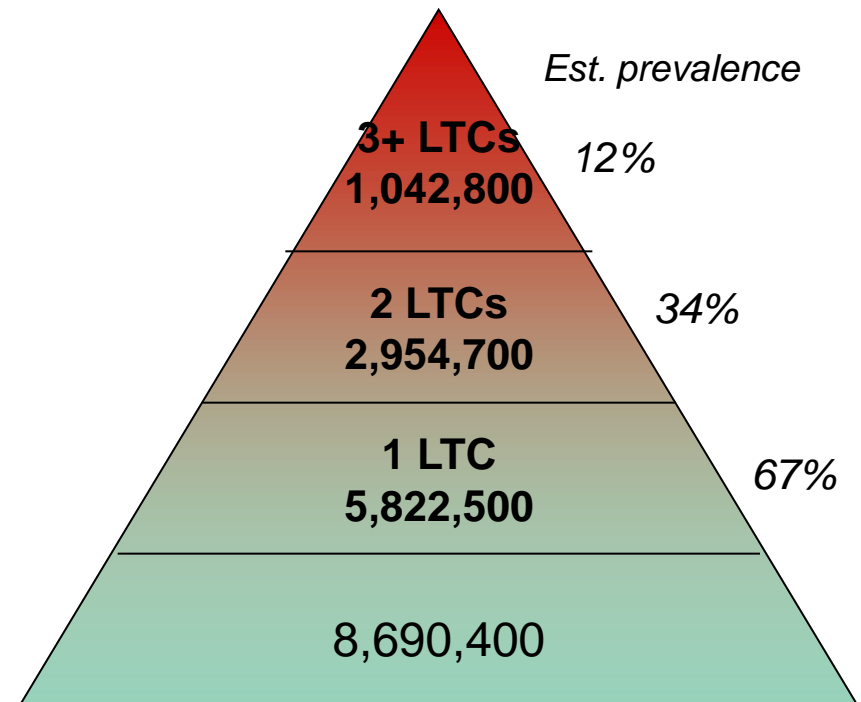
How many people is it?

- Estimates are unreliable – QOF reports do not facilitate reporting by multiple conditions
- However, the number of people with 3 or more conditions is likely to increase by around 60 per cent in the next 10 years (LTC team, 2010)

Prevalence of LTCs in over 65s			
No. of LTCs	UK	US	Canada
3+	12%	46%	n/a
2	34%	63%	42%
1	67%	78%	35%
0	34%	19%	23%

UK Numbers based on self-reported 1997 data from HSE
 US Numbers based on Medicare SAF 1999
 Canada Numbers from Statistics Canada. Canadian Community Health Survey (Cycle 3.1), 2005.

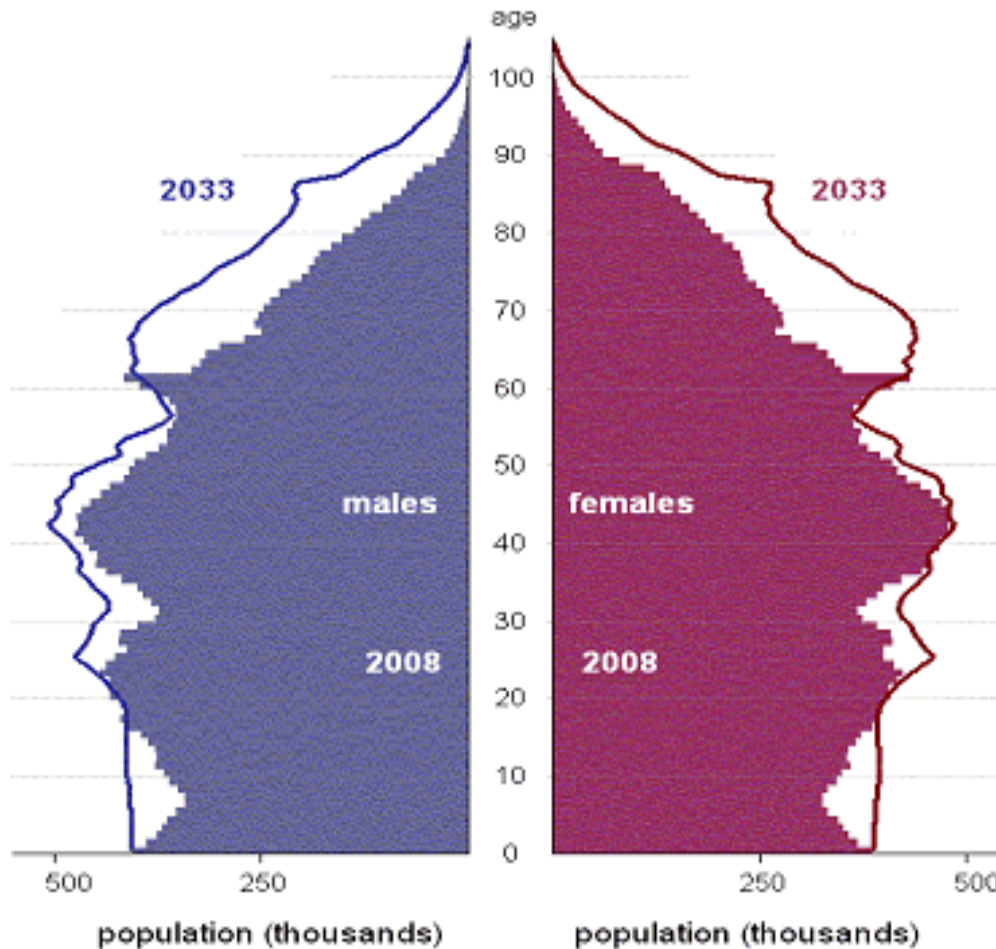
“Best guess” number of over 65s with LTCs



Numbers based on 2007 data on estimated residential population of over 65s in England and Wales and prevalence rates from HSE 1997

Social – Breaking down in more detail, we can expect fastest growth among the younger-old both for men and women

Estimated and projected UK population mid-2008 and mid-2033



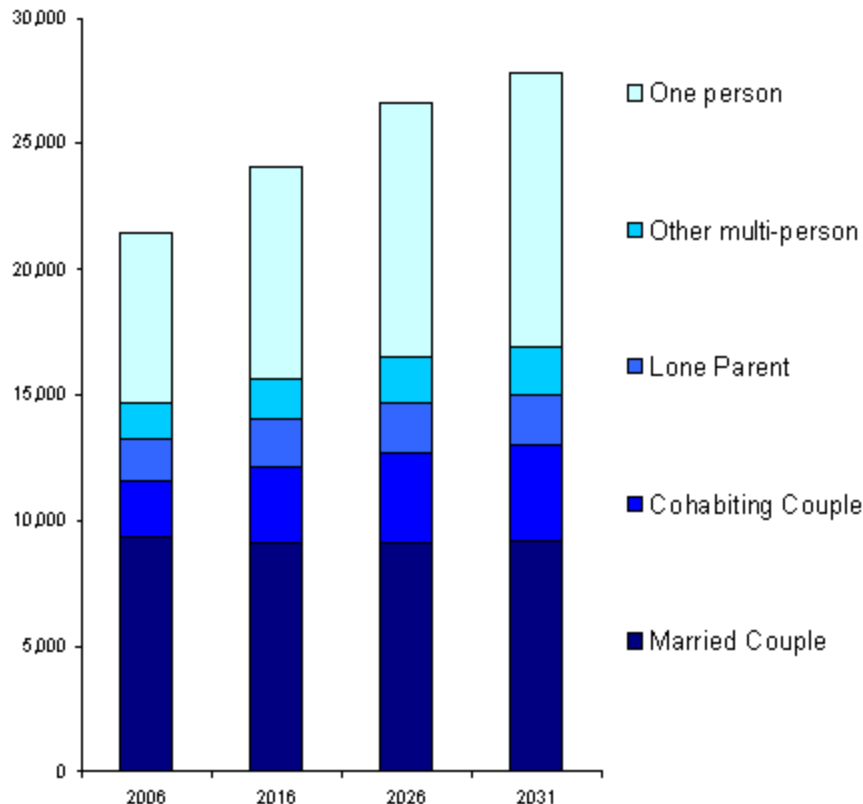
Large increases in the young-old

For women, by 2033, the population will also increase in young-old ages, while there will be slightly fewer women in their 40s. For males, almost all age groups projected to increase - particularly the young-old 70s

2008 population
2033 projections

Social – We also expect to see a change in household structures, with a third increased in lone person households over the next 20 years

Number of Households by type, England



Source: ONS

More single person households

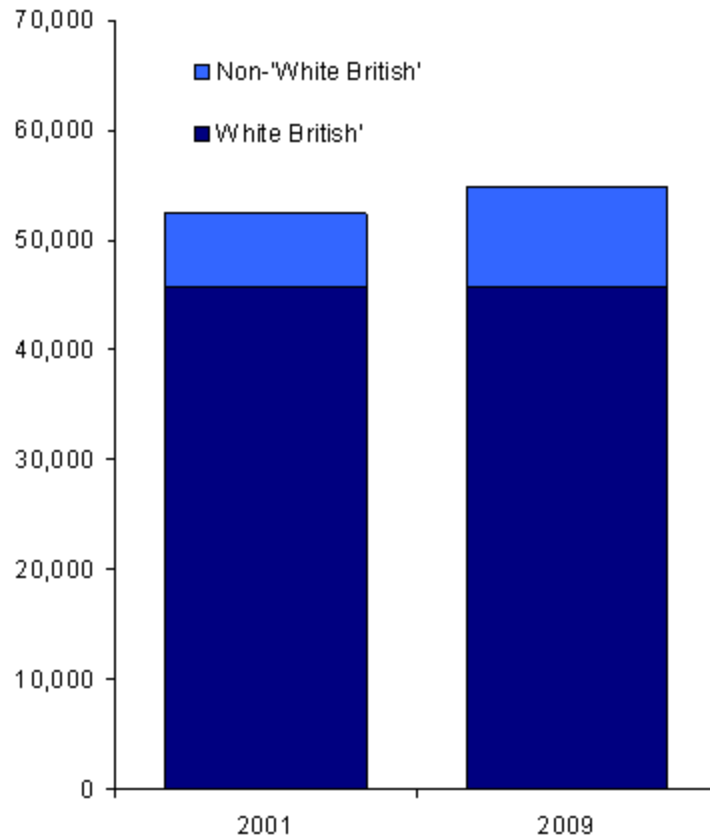
Increases in single person households, especially among working age, projected to outnumber married couple households by 2020

Family size shrinking and becoming more diverse

Childlessness increasing nearly one in five women born in 1961 are childless, compare to one in ten women born in 1941. Family structures more diverse with higher divorce rates, children living in step families and increased cohabitation

Social – Population growth since 2001 has been driven by 4.1% growth in non-‘White British’ group

Population change and ethnicity 2001 to 2009



Source: ONS

Increasingly diverse population

Growth in population through non-“White British” between 2001 and 2009

Increasing migration

International migration accounts for part of UK population increase – and is related to strength of the economy

Social – White British remaining largest ethnic group, but large increases in some group and geographic variations

Population by ethnicity, 2009

	Average annual growth since 2001	Mid-2009 population	Mid-2009 Proportion
White: British	0.0%	45,682	84.3%
White: Irish	-1.5%	574	1.1%
White: Other	4.3%	1,933	3.6%
Mixed: White and Black Caribbean	3.3%	311	0.6%
Mixed: White and Black African	6.3%	132	0.2%
Mixed: White and Asian	5.8%	302	0.6%
Mixed: Other	5.5%	243	0.4%
Asian: Indian	3.9%	1,434	2.6%
Asian: Pakistani	4.1%	1,007	1.9%
Asian: Bangladeshi	4.0%	392	0.7%
Asian: Other	5.7%	386	0.7%
Black Caribbean	0.9%	615	1.1%
Black African	6.2%	199	0.4%
Other Black	3.2%	126	0.2%
Chinese	8.6%	452	0.8%
Other	8.0%	423	0.8%
Total	4.1%	54,209	100%

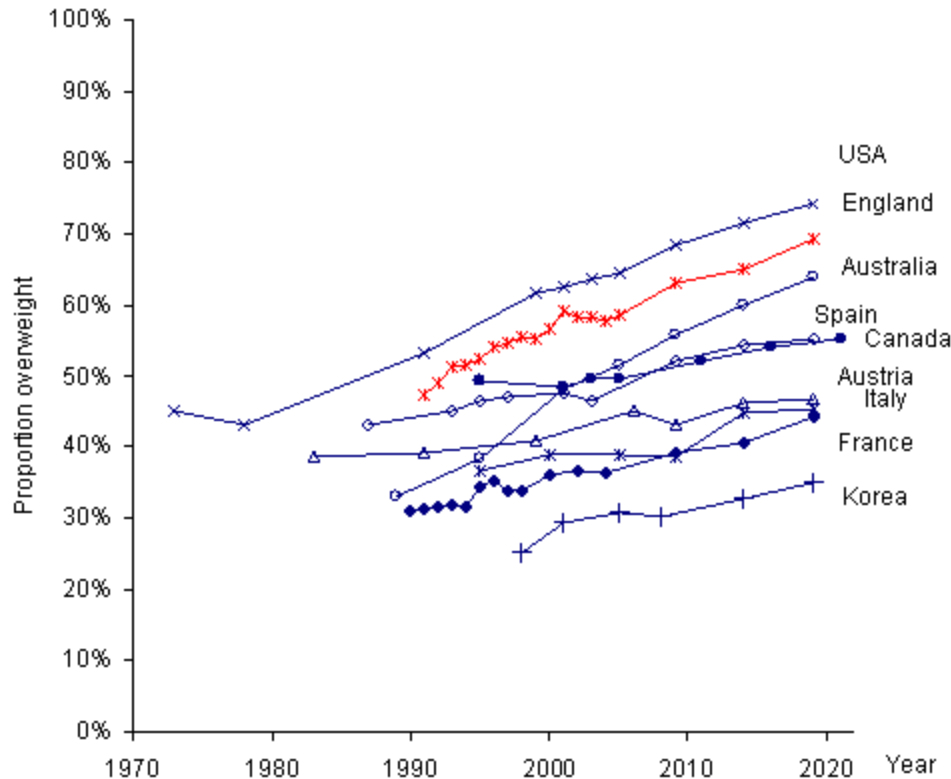
Changing ethnicity
Fastest growth among Chinese and other groups

Considerable variation at a local level
National picture can mask local impacts and concentrations of ethnic groups

Social – On health, difficult to predict but some evidence of increases in people with life-style conditions

Overweight rates

Past and projected future overweight rates in selected OECD countries



Source: OECD

Rising obesity

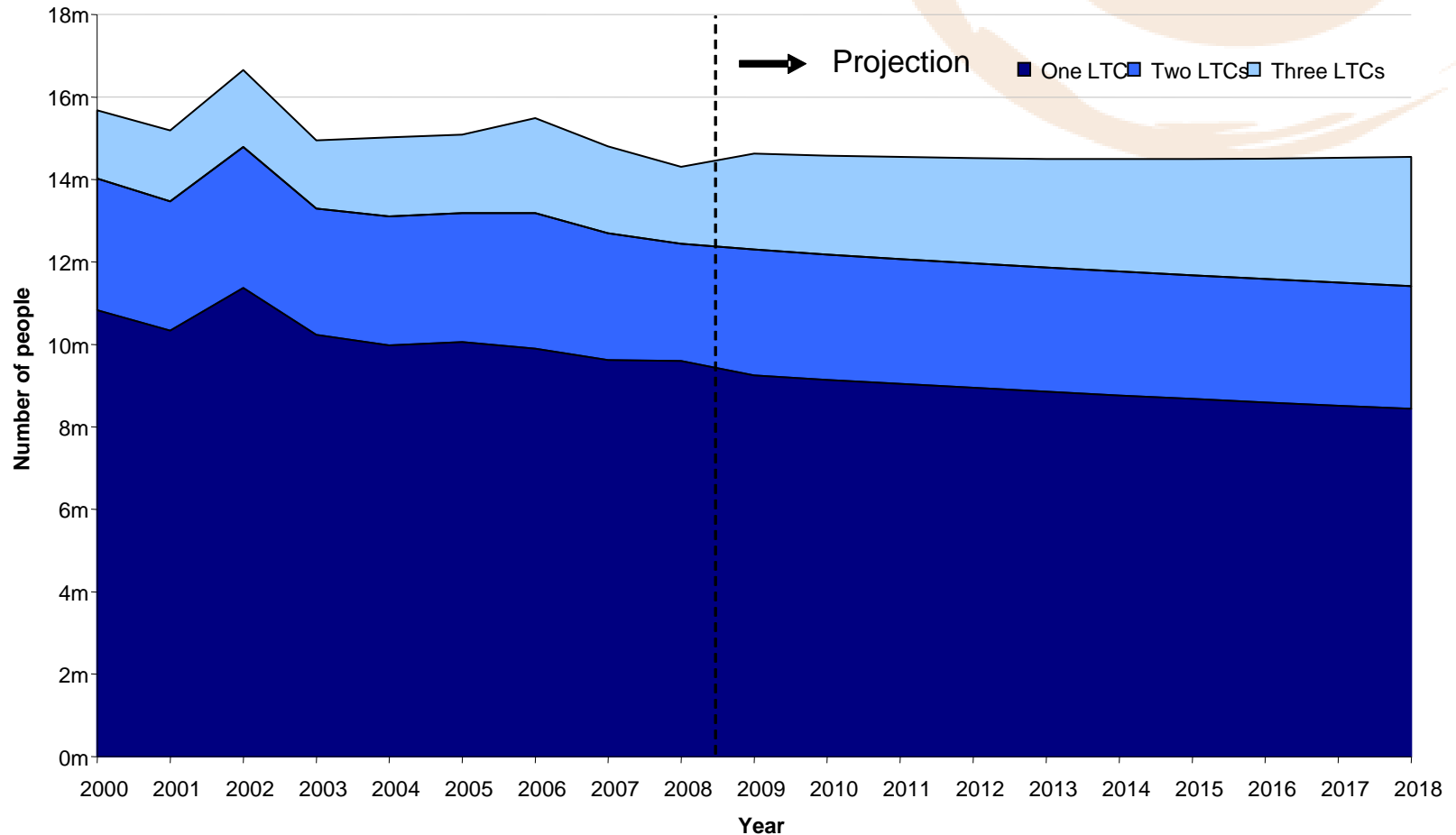
Overweight rates have risen rapidly over the past 20 years, high against other countries and are projected to rise

Rising incidence of “lifestyle” conditions

Future epidemiological trends also point to increased age-specific prevalence of liver disease, diabetes and arthritis, with impact on morbidity

Social – Numbers of people with long-term conditions projected to be relatively stable over the next ten years, but number with co-morbid LTCs set to rise to from 1.9m to 2.9 m.

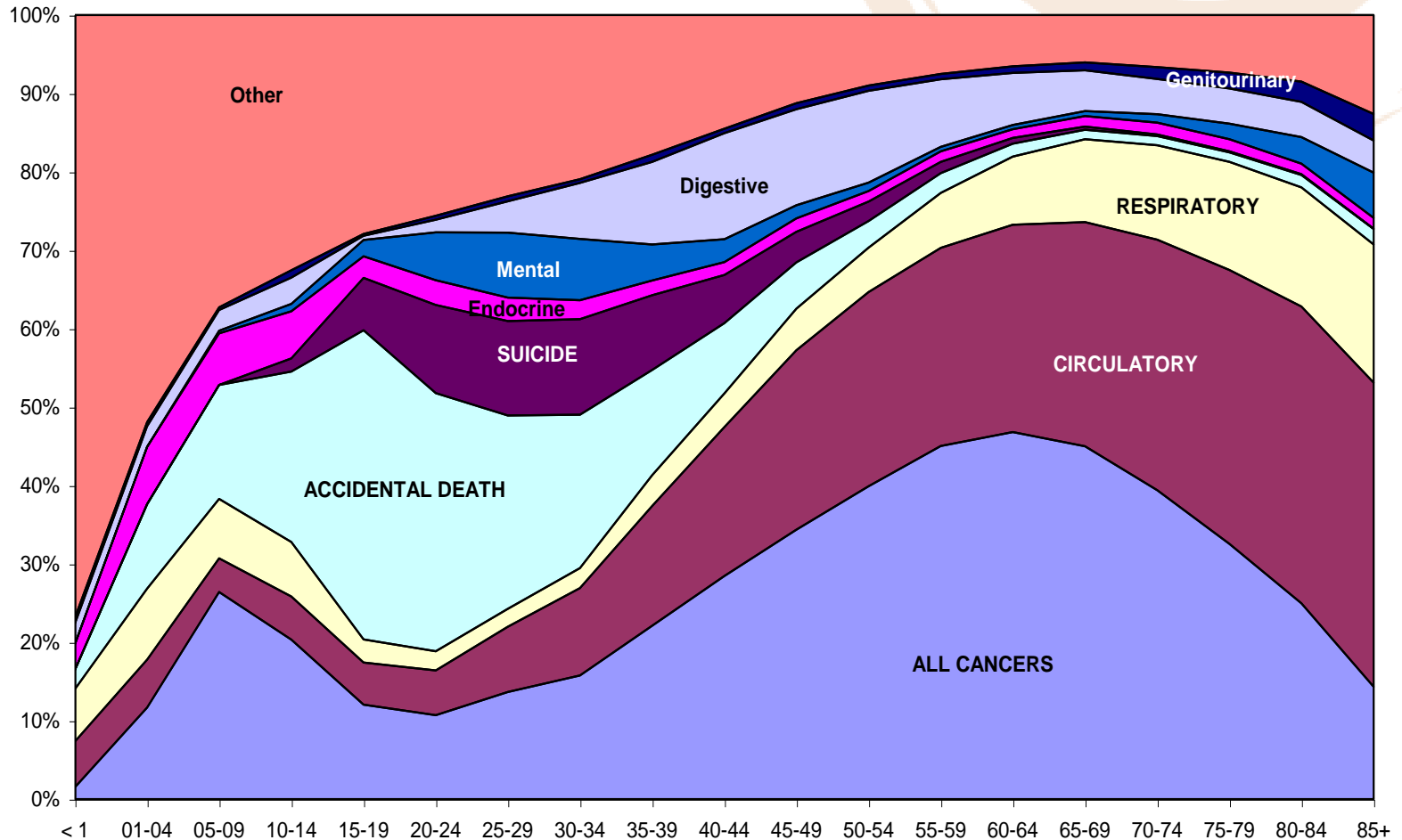
Actual/projected numbers with one or more long-term conditions by year and number of conditions



Source: Department of Health projections (2008 based)

Social – Cancer rates likely to increase as population ages, but also increases in deaths from mental disorders

Pattern of deaths in England, by age, in 2007



Source: ONS Death Registry

Deaths from mental disorders - For younger people (under 50) - these deaths are mostly people dying from mental/behavioural disorders associated with alcohol or drug use. For older people (over 50) these deaths are almost entirely due to dementia



Social – Persistent health inequalities in England by social status, by geography and by group

Michael Marmot's review indicated that there are systematic inequalities in health

Systematic pattern of declining health linked to declining socioeconomic status in England i.e. the 'social gradient'. Concentrations of both shorter life expectancy and greater disability tend to be, although are not exclusively, in some of the poorest areas

Within populations wellbeing varies greatly

There are wide variations in health outcomes across the country and different local areas face different health challenges. Looking beyond neighbourhoods and deprivation, certain groups maybe disadvantaged because of a combination of their circumstances, including a comparatively low uptake of support from the well being support from the NHS.

Persistent inequalities according to gender

Gap between male and female life expectancy has been narrowing faster within England than in comparable countries. However, while Male life expectancy in England is among the highest in the world, female life expectancy is relatively poor i.e. below the EU15 average

Social – From Hierarchy to networks and personal responsibility

Localism

The “Big Society” Policy statement, and the move to devolve NHS commissioning to local GPs are two examples that suggest greater power is being devolved to local people. Communities are also seizing the initiative, for example in the creation of town currencies to encourage spending within local shops. 2010 IPSOS MORI survey suggested the majority of people are interested in exercising more control over local services (where they can make a difference), however, worry about the practicalities and it in particular fairness. E.g. creating a postcode lottery for services.

Communication revolution - Social networks and social media

Moving from an industrial society to an information society, with the internet and social media radically changing the way people interact between themselves and organisations. Communities are no longer constrained by geographical boundaries, and popular opinion can be rapidly harnessed to exert significant influence. Social Media capable at targeting messages at specific audiences. You-Tube the preferred search engine of the young.



Social – From Hierarchy to networks and personal responsibility (Continued)

Dematerialization of business

Businesses replacing bricks and mortar with online stores. Multi-function buildings, with facilities shared with between business, public and voluntary sector. E.g. School in the morning, work place in the afternoon, club and restaurant in the evening.

Democratisation from transparency and social networking

Drive across central government and local public sector organisation to publish all information. Brighton's “Open City” project (and “Future Surrey”) also aims to link up information across all public services and give people a greater voice. Social networking technologies allows for greater public engagement and participation in decision making that could strengthen democracy and help people identify with their communities

Co-production of services.

The involvement of people in aspects of service delivery: E.g. on-line banking, travel bookings and at the supermarket checkout. Patients involved with the development of their care plans and people purchasing their own support packages with a personal care budget.



Social – Attitudes and engagement with health organisations

Involvement with healthcare issues

In Britain, only 13% of people are involved with health issues, compared with 20% in the US, 23% in Germany and 35% in China. Those that are actively engaged in healthcare issues, more likely to either work in the field of healthcare, taking prescription medications, care for someone else or have a severe or chronic illness.

Trust for the professionals, but not the organisations

From an international perspective, the public continues to demand that its health organisations are transparent and socially responsible, but safety concerns continue to create scepticism and distrust.

However, those people who engage with the health organisations are generally more trusting of the organisations and the services (by around 10% more than those that do not engage). Furthermore, health information obtained from a health professional is considered more reliable than from any other source, although 88% will obtain a second opinion on-line.

Social - Workforce

Specialisation

Over more than 20 years, healthcare professionals become more specialised, with clinical disciplines, such as surgery and anaesthetics dividing up into sub-specialties, often creating centres of clinical excellence. (e.g. Paediatric Cardiac Surgical Units). The Boundaries between the professions have also blurred, with the appointment of consultant nurses and GPs practising with a special interest (GPSI).

Professional influence on healthcare development

Alongside the impact of new healthcare technologies, all health professionals, but especially the medical staff and their Royal Colleges, continue to have a significant impact on the range and delivery of health services. The percentage increase in consultants within the NHS is the largest increase in comparison with other staffing groups (see next slide).

Social – Workforce continued

NHS Staff numbers

The table below shows the percentage change in staffing across the NHS over the past 10 years. (1999 to 2009)

	1999	2005	2009	Change	Increase over ten years %
All doctors	88,693	114,470	132,683	43,991	50
All consultants	21,410	29,613	34,654	13,244	62
All GPs	28,354	31,901	36,085	7,731	27
All nurses	261,340	321,537	336,007	74,667	29
Scientific, therapeutic and technical	86,837	113,214	128,331	41,494	48
TOTAL NHS (including clerical, admin & others)	873,547	1,104,008	1,177,056	303,509	35

Source: NHS Information Centre data. Master Sheet 2009

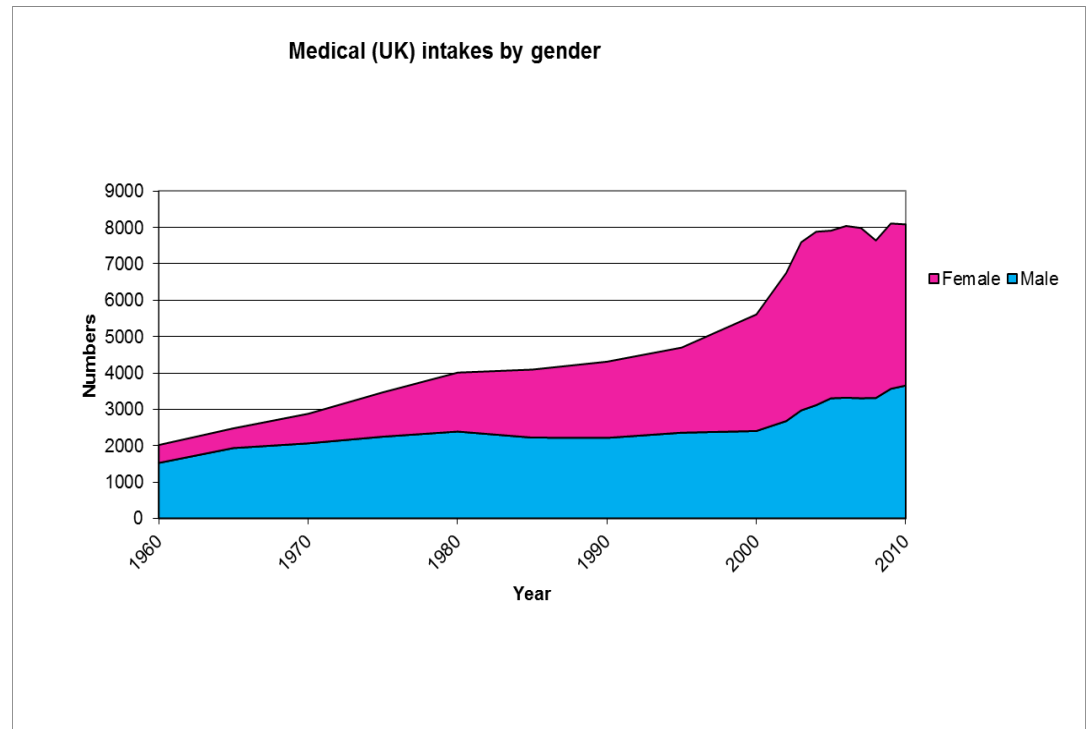
Social – Workforce continued

Medical workforce characteristics

Medical workforce planning remains a particular challenge because of the long lead times to train medical staff. (15 years from student to consultant)

For some, the steady supply of trainee doctors is also seen as a block to the development of new ways of delivering service.

The majority of doctors in the future will be female



Social – Workforce continued

Public and Government attitudes to the healthcare workforce

Past trends show intolerance by government for the unemployment of healthcare staff (medical and physiotherapy staff being the most recent examples)

From the public perspective, many believe that a consultant opinion is best and in some instances can drive referral activity.

Workforce pay and pensions

The pay bill has been increasing as the workforce ages and salaries increase due to progression, coupled with increases in a more expensive workforce. The proposed pension changes may result in an older workforce and retention of skills and/or may lead to an acute drop off of experienced staff in the short-term.



● TECHNOLOGY

Technology – general observations

Falling cost of some technologies making it more accessible, e.g. mobile phones.

Massive growth in volume and ease of access to information and continuing rise in rates of internet penetration, although not for all households

Increasing connections across and within countries through use of new technology such as social networking sites

Increasing opportunities for remote and flexible working

High dependency on complex infrastructure and risks of exposure to criminal networks / cyber crime

Economy increasingly dependent on mechanical/electronic resources and technologically skilled workers

Healthcare technologies are generally believed to have increased costs in the past

If technology diffuses differentially, it could widen the gap in opportunity and access to health care.

Technology – Increasing digitalisation of health care could change the model, but tend not to be cost reducing and ask questions on security of data

Information explosion

The increasing digitalisation of healthcare can produce vast amounts of information, which will require sophisticated knowledge management systems to aid clinicians and health services planners / decision makers if the benefits are to be maximised.

Historically, new drugs & clinical technologies create inflationary pressures and it might be assumed that this trend is likely to become more acute over the next 20 years. However, the introduction of digital communications and knowledge management has the potential to simultaneously exacerbate these pressures and facilitate more cost effective models of health care delivery

Information governance

It will be to essential to ensure information can be kept safe, trusted by clinicians and the public, and used appropriately. With the emergence of so many websites and applications, how will people decide what is safe? With increasing amounts of information held on portable/remote devices, how will researchers and health planners gain access to valuable information?

Technology – Changes in medical technology have potential to change location of care

Transferring Diagnostics from the hospital to the home or community

Development of home monitoring services, mobile phone applications, and home kits for STIs. Transfer of hospital based technology into the community/ home setting. An American company, Diagnosis for All, is pioneering diagnostic chemicals that can be printed onto paper from a typical home printer, providing 15 effective tests.

Monitoring devices

Implantable monitoring devices, (some of them self-powered), are being developed, enabling clinicians to remotely monitor a patient's condition in real time. Examples include the measurement of cardiac function and tumour growth.

External monitoring devices are becoming more sophisticated and smaller with improved battery technology, and some communicate wirelessly to mobile phone for example

Other Developments

Surgery

Minimally invasive / image-guided techniques, and robotic surgery leading to shorter lengths of stay and access to specialists on line, who are able to operate remotely from another part of the country or different country

“Frugal technologies”

“Frugal technologies” provide an opportunity to deliver services at lower cost and dispersed more locally (e.g. smaller and cheaper machines allow ECG monitoring to take place in GP surgeries)





TTechnology - Medical technology could become increasingly personalised

Predicting the risk of disease

DNA testing and digitalised monitoring will improve our understanding of propensity to particular illnesses, which may lead to earlier and more successful treatments. The computerisation and integration of medical records enables population risk stratification from analysing large amounts of medical data

Personalised Medicine

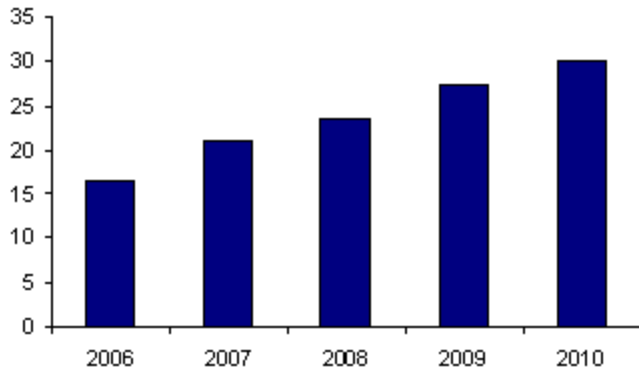
Better targeting of existing drugs and new ones through Genetic testing proteome monitoring. Both new and existing drugs will be better targeted, and it will be possible to identify those people who are not likely to benefit in advance.

Regenerative medicine

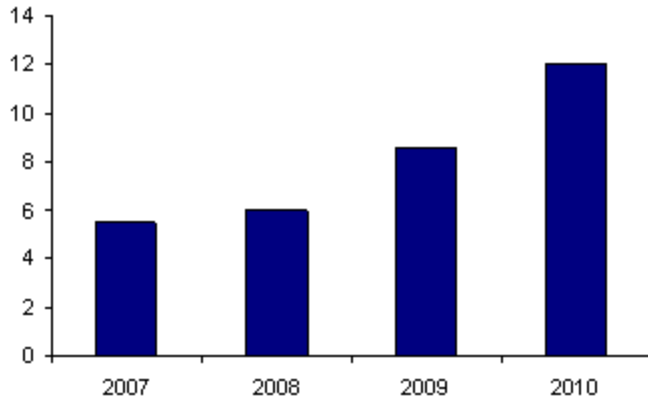
Growing new tissue outside the body and re-implanting it; stem cells used to generate re-growth in situ.

Technology – New technology and digital information could have positive implications for health

Adults accessing the internet every day
millions



Adults using a mobile phone to access the internet
millions



Mobile access to internet

Over 30 million people now access the internet every day – 73% of English households have broadband. Number of people using mobile devices to access the internet is growing

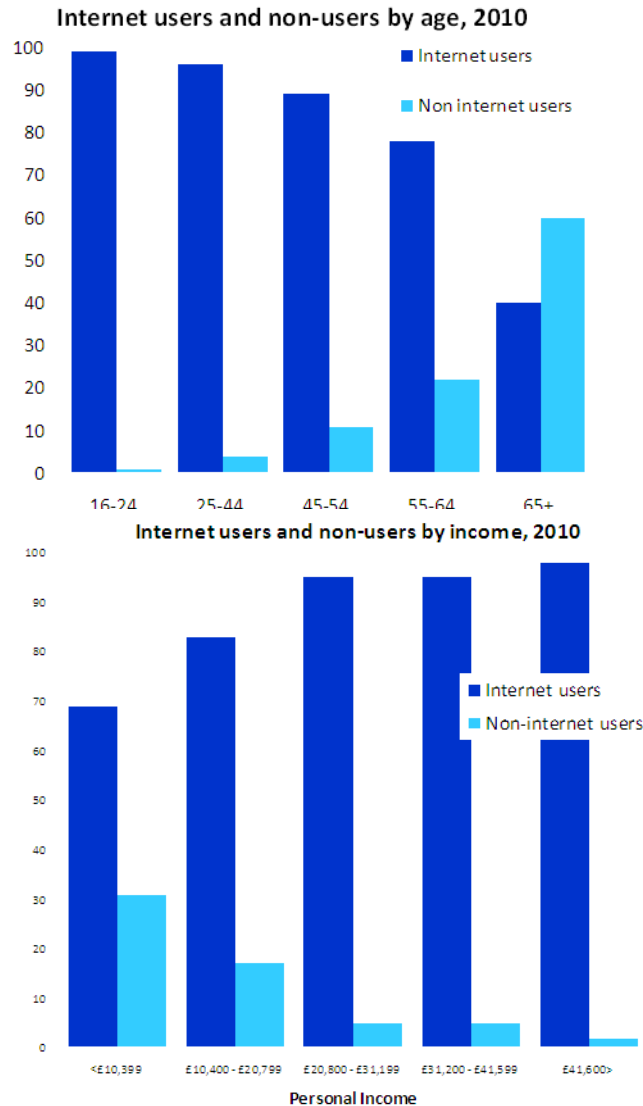
Health information

Of internet users, 34% of men and 44% of women say they use it for seeking health related information – opportunities for social marketing

Digitalisation of data

Digital photography and monitoring devices allow conditions to be either diagnosed in their own home, or for diagnostic information to be sent electronically

Technology – Diffuses differentially and could widen the gap between opportunity and access



Use of new technology is not universal

9.3 million people have never used the internet, and internet access and use is concentrated in younger and higher income groups

People with illness less likely to use the internet

People with a limiting illness or disability are more likely to have never used the internet – 39% compared to 14% of adults who either had no illness or disability, or were not limited by any illness or disability.

SCENARIOS

Developing the scenarios

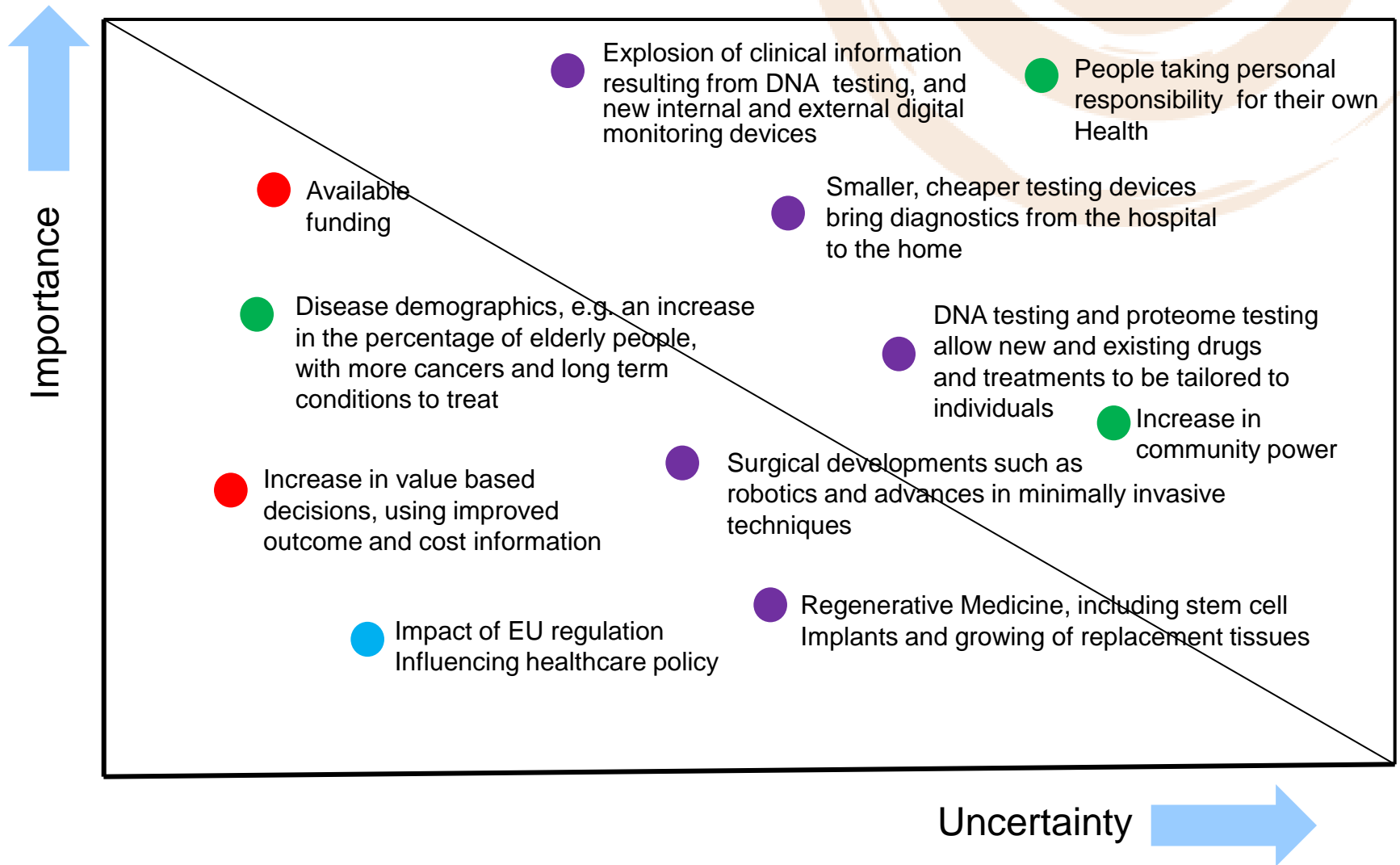
The first phase of the project is to construct a number of “visions” for the future of healthcare, by examining the key strategic trends that are likely to impact on people and their services.

Scenario planning in healthcare is a major challenge because of the complexity of the service and wide range of factors that can influence the characteristics of the service. In order to develop a manageable number of scenarios, two criteria have been used to help decide which trends are best used to form a framework for the discussions:

1. How **important** is the trend in relation to development of a sustainable health system?
2. How **certain** are we of the impact of the trend?

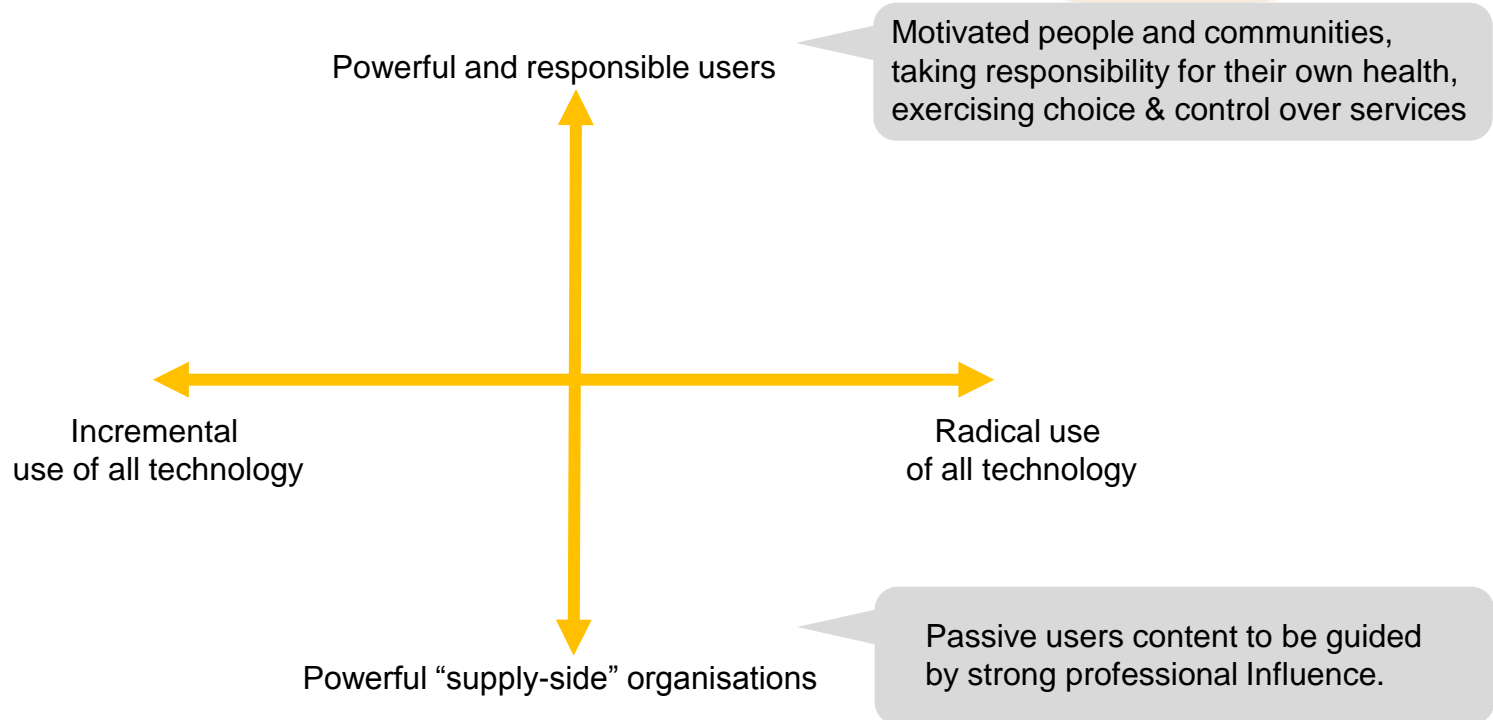
The key trends and issues from the PEST analysis have been mapped against these criteria to consider their relative importance and certainty to each other, and the results are shown on the next slide

Importance from a sustainability perspective



Proposed trends to use in scenario planning

There are many different and legitimate permutations of trends that could be used to establish a framework for scenario discussions, the following sets of trends have been chosen for the event of the 30th September 2011.



Notes

