

healthcare futures

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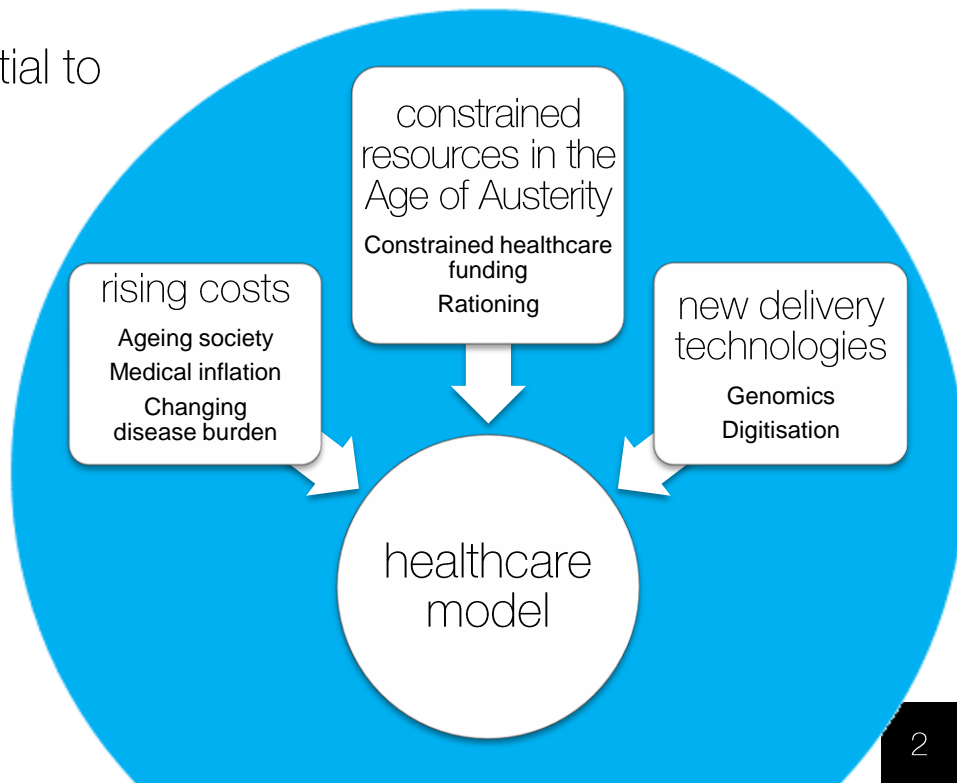


outsights
insights from the outside

3 critical forces shaping healthcare_____

Rising costs, constrained resources in the Age of Austerity and new delivery technologies can radically transform healthcare in the UK and indeed, around the world.

They have the potential to disrupt outdated healthcare models designed to provide critical care rather than contend with myriad demands on them today.



rising costs

Simply put, we are using more healthcare and costs are rising.

Across the OECD there is a clear long term trend: over the last 50 years spending on healthcare as a proportion of GDP has almost trebled, from approximately 3.8% to 9% and the ageing society is increasing the burden. In 2008, for the first time, the UK had more people over pensioner age than under-16s.

Yet, an ageing society alone is not responsible for rising health costs. The US Congressional Budget Office has calculated that [three-quarters of the rise of medical costs is driven by medical inflation](#). A large part of this is driven by technology: more things are treatable but often the technology involved is expensive.

A changing disease burden also places an upward pressure on health costs. Take for example, the “twin epidemic” of obesity and diabetes: it has been

forecast that between 2002 and 2032 the cost burden of diabetes will increase by fourfold in developed nations.

constrained resources: the age of austerity

Throwing money at the problem is unlikely: UK GDP fell by 4.9% during 2009 and government finances are strained.

How will the system cope? Throwing more money at the problem is unlikely: UK GDP fell by 4.9% during 2009 - the largest on record - and government finances are strained as tax receipts fall and benefits payments increase.

Healthcare expenditure is even more troubling: in October 2010 the government announced a settlement of a 0.1% per year increase in NHS spending, but the well-respected [King's Fund](#) health think tank suggests that this actually represents a real-term cut of 5-6%.

An ageing population, obesity and the cost of new drugs mean an increase of 3% is needed just for the NHS to stand still. This poses awkward questions about how services are rationed.



new delivery technologies – health’s ‘Google’ moment

Information and communication technologies may unleash forces that will lead a shift away from physician-centred healthcare to new locations: the home, retail stores and new health centres.

The Internet and Google in particular, has disrupted and transformed how information is delivered to us. Healthcare could be facing its own “Google” moment as technologies – notably genomics and digitisation – could disrupt how healthcare is delivered.

It is hoped that direct-to-consumer genetic tests present a huge opportunity when linked to developments in preventative medicine such as [pharmacogenetics](#) (drugs tailored for individuals’ genetic make-up) and [nutrigenomics](#) (the interaction between genes and nutrition to personalise diets to promote good health). These technologies could further be reinforced by cost savings. Much hope is being placed in genomics and digitisation to save costs through preventative healthcare.

Digitisation has the potential to change the delivery of health in three ways.

Mobile Internet technologies enhance the ability of patients to self-diagnose and can be used to encourage healthy behaviours.

It also has the potential **to change the location of provision**. Information and communication technologies may

unleash forces that will lead a shift away from physician-centred healthcare to new locations: the home, retail stores and new health centres.

Finally, **healthcare could experience its own information revolution**. Personal health records have the potential to give individuals control over their own health data, and data-mining technologies will create new insights into managing patient care.



future-proofing healthcare

On a spectrum ranging from the relatively certain to the uncertain, the most certain of these is the rising cost of healthcare driven by sustained expansion in demand.

Constrained resources in the Age of Austerity, particularly public and private finances, limit the ability of supply to meet the increase in demand, but there is uncertainty to how poorly, or otherwise, economies will perform over the next decade.

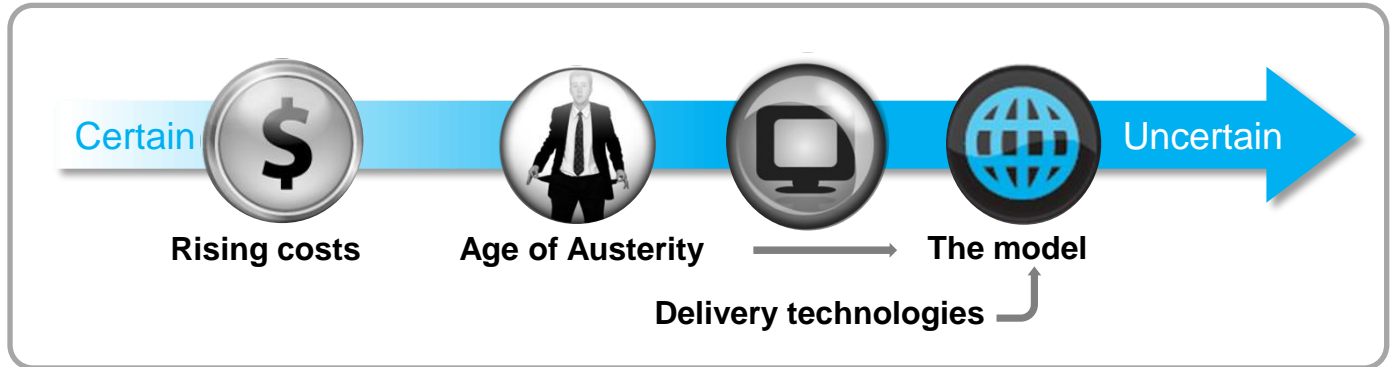
Delivery technology is even more

uncertain in scale and timing. We know that genomics and digitisation enable the provision of preventative medicine, yet the level of adoption of these technologies is uncertain: will there be the required investment in technologies? How well will such technologies be received by patients and the medical profession? New technologies often take much longer than expected to bear fruit.

The most uncertain is the model of healthcare delivery in the future. The Age of Austerity and delivery technologies could radically alter how we

receive our healthcare. We could move from a Scenario of universal healthcare towards a Scenario of individualised healthcare, a future in which the individual takes more responsibility for their health in terms of funding in the choices they make and through taking preventative action.

For a country that has led the world in universal healthcare, the shift to more individual responsibility could be as revolutionary as the NHS was itself in 1948. This shift surfaces a number of hot-spots on the healthcare value chain.



the model: universal or individual? _____

History suggests that any change in healthcare systems is slow-moving. Strong interest groups both in the medical profession and the patient community are often resistant. Plus, the scale of change is enormous. The NHS in the UK ranks alongside the Indian railways and the Chinese Liberation Army as one of the biggest employers in the world.

The future of the healthcare system may mean that the healthcare system in 2020 remains universalised – one-size fits all, with tweaks at the edges in the name of greater choice and personalisation.

But an alternative Scenario exists: the alignment of the Age of Austerity and the new potential of delivery technologies could lead to a much individualised world.

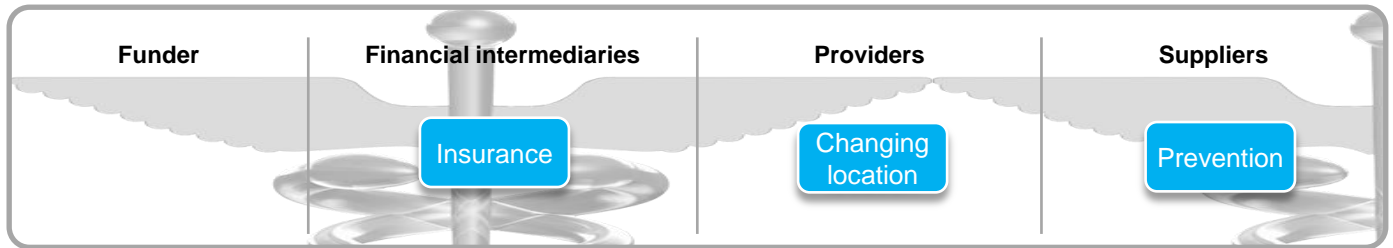
3 value chain hot-spots

The three critical factors shaping the future health model point to three future value chain hot-spots: **financial intermediaries** (insurance); **providers** (changing location) and **suppliers** (prevention). Whilst healthcare has improved vastly in the last 50 years – both in drugs and other medical technology – the way we access healthcare and how it has been delivered has remained relatively unchanged.

In the next decade we can envision a Scenario where healthcare delivery is radically different. Whilst there is high uncertainty about how far and how fast the **model** will change, it demonstrates the potential scale of disruption.

insurance

As public funding comes under strain, new sources of private funding – notably insurance – will become more attractive. If the GP commissioning consortia outlined in the summer 2010 government health White Paper is realised, then we can expect greater localism and competition in health provision. But the shift away from a universal system may not end here. Some have suggested that the reforms are pointing to a more deregulated world in which local health providers, both large and small, are able to advertise and sell whatever health coverage or insurance products they desire. Insurance could become more affordable and open to all. If this were the case the marketplace could become much more competitive.



changing location

Digitisation can deliver healthcare in new locations and disrupt existing delivery models. New players such as gyms and supermarkets could enter the health provision market, retail chain Boots, for example, has already installed diagnostic centres in two of its stores.

Hospitals may also become more “virtual”. The system could be reorganised around a hub - where patient information is collected, collated, analysed, stored and sent to the best and most appropriate place - be it a doctor, nurse, caregiver or even the patient. Under this Scenario it is possible to communicate and exchange information worldwide, hence enabling consultations all day, every day.

One outcome of this change could be a polarisation between super-specialisation and lower-cost professional technicians. Specialisation will occur as telehealth allows patients to be referred to specialists remotely.

The person supervising the patient for consultation with the super-specialist need not be a doctor but rather a lower cost technician.

prevention

New entrants sitting in a space straddling providers and suppliers such as direct-to-consumer genetic testing company [23andme](#) and [GoogleHealth](#) – which allows patients to control their health records – are developing relationships with patients by enabling better prevention.

The cost and time involved in sequencing a human genome has fallen exponentially. The first human genome, sequenced in 2003, cost approximately US\$10 billion and took over a decade to complete. By 2007 it cost US\$100 million and took two years to complete; in 2008 it was US\$1 million in six months and today, it costs US\$10,000 in one week. By 2012 it will be US\$100 and five days. Whilst a company has yet to successfully create a business model around genetic testing – many start-ups are experiencing early hiccups – this day is not far off as costs fall.

The growth in digital health apps has been similarly dramatic. By some estimation, there are now over 5,000 health apps for smartphones. These broadly fit into two categories – those that help with self- and remote diagnostics e.g. the iStethoscope

that transmits clear signals of heartbeats to a cardiologist, and those which reinforce healthy behaviours such as reminding you to take medication or ensuring you get enough exercise.

Some have questioned the “stickiness” of such apps as people download them for free, or for a minimal cost and then discard them. But for both digital health technologies and genomics, it should be noted that it is not unusual for new technologies to fall short of early expectations, only to succeed more gradually. Such technologies would mark a departure from a universal system towards one of greater personalisation and individual responsibility.

conclusion

On their own, these developments would represent a more individualised approach to healthcare. Combined, they would represent a wholesale shift away from universal healthcare to a system which is much more individual, causing significant changes all along the health value chain.

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