Academy of
Medical Royal
Colleges

House of Lords Select Committee on the Long Term Sustainability of the NHS

Academy of Medical Royal Colleges' submission

23rd September 2016

About the Academy

The Academy of Medical Royal Colleges (the Academy) is the coordinating body for the UK and Ireland's 22 medical Royal Colleges and Faculties. They ensure patients are safely and properly cared for by setting standards for the way doctors are educated, trained and monitored throughout their careers.

Healthcare is complex and increasingly there are issues where a cross-specialty perspective is needed. It's the Academy's job to ensure this work is done effectively and then acted upon by policy makers, regulators and clinicians.

This unique position gives us a leading role in the areas of clinical quality, public health, education and training and doctors' revalidation.

The 22 medical Royal Colleges and Faculties are members of the Academy, bringing together the views of their individual specialties to collectively influence and shape healthcare across the four nations of the UK.

More information can be found at www.aomrc.org.uk

Executive Summary

The Academy welcomes the House of Lord's Select Committee on the long term sustainability of the NHS's inquiry and the opportunity to submit evidence. The Royal Colleges and Faculties which we represent have been concerned for some time about the unprecedented challenges the system faces and believe that these must be urgently addressed by government, the whole system and individual clinicians and healthcare. We hope this inquiry will be a first step in this process. A short summary of the key points in our submission is as follows:

Resources and funding

- The health and social care system needs more investment as current levels of funding are insufficient. We would like to see a real terms funding increase of £40 bn by 2030. This amounts to a rise from 7.4 per cent to 8.8 per cent of GDP over the next 14 years (at current levels)

- This should also be funded through increased taxation and restrictions on products where there is evidence that it improves people's health such as minimum alcohol pricing and further levies on sugar and tobacco products

- The government should reverse the recent cuts to public health budgets. They are already proving to be a false economy
- NHS staff can support a sustainable system by tackling the significant amount of waste seen in the NHS through changes in clinical practice.

Workforce

- Workforce shortages across the system should be addressed by creating more training posts
- The immigration system should remain flexible to allow employers to recruit from overseas
- The government must work to prevent the mass exodus of EU staff from NHS services following Brexit
- Royal Colleges and leaders must do more to retain NHS staff and create a culture where they feel valued
- Particular attention must be considered to the workforce issues faced by rural communities.

Models of service delivery and integration

- Integration and reconfiguration decisions must be evidence based
- Implement the *General Practice Forward View* and properly fund it
- Genuine co-production must be at the heart of all reconfiguration. Without it, any changes are difficult to implement at a local level
- Ensure parity by investing more in mental health.

Prevention and Public Engagement

- The government must show real commitment to tackling obesity, smoking and alcohol consumption. The first step towards this should be the reversal of the cuts to local authorities public health budgets
- Legislation should be used to further regulate industry, where there is evidence that this is effective, for example, maximum sugar content, minimum alcohol pricing and further tobacco levies
- Co-production is essential to the successful delivery of any reconfigured service
- Clinicians must also engage with local patients and the public to make the clinical case for sustainability and reconfiguration.

Digitalisation

- New technology will be most effective when there is strong clinical input, and steps are taken to evaluate evidence of efficacy. Procurement should be clinically led

- Digitalisation will require investment, not just in capital outlay but also maintenance, updates and integration solutions
- Managing demand is complex, while there may be a reduction in demand for certain services, there may be other unforeseen demands which will need consideration before wholesale introduction.

The future healthcare system

1. Taking into account medical innovation, demographic changes, and changes in the frequency of long-term conditions, how must the health and care systems change to cope by 2030?

The Academy shares the vision set out in NHS England's the Five Year Forward View (5YFV)[1], published in October 2014. This vision for health and social care accurately describes the challenges we face and the solutions required to overcome them to ensure a truly sustainable system. The success of the NHS over many decades, as well as medical progress has resulted in people living longer, which both bring a new and different set of challenges to the system. We have an increasing number of patients with complex healthcare needs and multiple long term conditions. FYFV recognises that to address this we need to move away from treatment, towards prevention, move more care into the community, fully integrate health with social care as well combining physical and mental health care. This is vision shared by Academy and its members.

Almost two years after the publication of the 5YFV, there appears to have been little meaningful development; the 'radical upgrade in prevention' has failed to materialise. Instead, we have witnessed cuts to local authorities' public health and social care budgets. This will further compound the challenges of a sustainable healthcare system.

It is clear that some fundamental changes must take place in order for the NHS to become sustainable. It will take commitment from government, local leaders and individual clinicians. We all must play our part.

Resource issues, including funding, productivity, demand management and resource use

2. To what extent is the current funding envelope for the NHS realistic?

The Academy does not believe the current funding envelope for the NHS is realistic. The growth in demand without a relative increase in the necessary funding has left providers with unprecedented deficits and crucial targets missed. In 2009/2010 less than 10% of trusts were in deficit; this increased to 65% in the last financial year. 80% of acute trusts are in deficit, compared with 5% three years ago[2]. This cannot continue.

While integration and efficiency will result in savings, it will not provide the system with the resources necessary to operate safely and effectively. The UK spends less of its GDP (around 7.4%) on healthcare than most other developed nations and so it is entirely sensible to argue that there is scope to increase overall spending. The Academy agrees with the OBR's recent projections, which suggest that UK health services require a real terms increase of £40 bn by 2030.[3] This amounts to a rise from 7.4% to 8.8% of GDP over the next 14 years.

[1] https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf
[2] http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/Deficits_in_the_NHS_Kings_Fund_July_2016_1.pdf
[3] http://budgetresponsibility.org.uk/docs/dlm_uploads/Health-FSAP.pdf

a. Does the wider societal value of the healthcare system exceed its monetary cost?

The evidence is clear that the societal value of the healthcare system, particularly one which includes public health and the care system, exceeds its monetary cost. The Faculty of Sexual and Reproductive Health uses the case of the societal value in preventing unintended pregnancy brings through the relatively low cost of investment in contraception. If the estimated current levels of provision and access to contraception are maintained, the wider public sector cost of unintended pregnancy is expected to be between £73 bn and £115 bn between 2013-2020.[4] There are many more examples of this kind, particularly in public health.

b. What funding model[s] would best ensure financial stability and sustainability without compromising the quality of care? What financial system would help determine where money might be best spent?

Outcomes and prevention would be properly recognised and rewarded in any sustainable funding model. The current tariff system creates perverse incentives by rewarding activity alone.

The Academy recognises that our colleagues in social care face an even greater challenge than in the NHS. The sustainability of either system cannot be considered separately. Serious thought should be given to a funding model that integrates their budgets to support the delivery of integrated local services, providing a truly 'cradle to grave' service. Kate Barker's report for the King's Fund addresses this in detail.[5]

c*. What is the scope for changes to current funding streams such as a hypothecated health tax, sin taxes, inheritance and property taxes, new voluntary local taxes, and expansion on co-payments [with agreed exceptions]?*

The Academy strongly believes in a healthcare system which is free at the point of use; although this is ultimately a political decision, it is best funded through general taxation. This method also avoids additional costs related to transaction charges – a model used elsewhere in the world. Indeed, in 2011 the US based Commonwealth fund, outlined how the UK healthcare system was one of the most efficient and cost effective in the world. That does not, however, mean that the NHS cannot be made more efficient and effective.

Royal Colleges and Faculties are particularly supportive of the implementation of industry levies, where there is evidence that it improves people's health, for example in minimum unit pricing on alcohol[6], maximum sugar levels and further levies on tobacco products. This generates immediate tax returns but is also an effective prevention strategy, reducing future financial pressures.

---

[4] http://www.fpa.org.uk/sites/default/files/unprotected-nation-sexual-health-full-report.pdf

[5] http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/Commission%20Final%20%20interactive.pdf

[6] http://www.fph.org.uk/uploads/050110_FPH_Alcohol_Bill.pdf

d. Should the scope of what is free at the point of use be more tightly drawn? For instance, could certain procedures be removed from the NHS or made available on a means-tested basis, or could continuing care be made means-tested with a Dilnot-style cap?

The Academy believes that the principle of healthcare being free at the point of use should be protected. That said, given that extent of the financial pressure the system is facing the Academy believes there should be a national conversation about how the funding gap can be met. It should genuinely engage the public as well as those working in health and social care. Both government and those working within the health system have a duty to do this.

We also recognise that there is more the NHS and its staff can do to support a sustainable NHS. There are still significant amounts of waste in the system, which can be tackled through changes in clinical practice. It is estimated that around 20% of mainstream clinical practice brings no benefit to the patient as there is widespread overuse of tests and interventions.[7] The Academy published seven key recommendations which outlined how clinicians can reduce waste and deliver higher value care.[8]

Choosing Wisely, a global initiative which works with both patients and clinicians to reduce unnecessary tests, treatments and procedures is led by the Academy in the UK. This attempts to create a shift in culture where patients are more involved in decisions about their care. The Academy is poised to launch a national campaign on this issue, by publicising a list of 50 treatments and procedures of questionable value. These have been compiled collectively by the medical royal colleges and faculties and include such examples as prescribing exercise for mild-depression as well as more technical alternatives.

Workforce

3. What are the requirements of the future workforce going to be, and how can the supply of key groups of healthcare workers such as doctors, nurses, and other healthcare professionals and staff, be optimised for the long term needs of the NHS?

There are currently significant workforce shortages, which must be addressed. All specialities in medicine face staff shortages, the exact number of which changes from year to year; the current problem is particularly prevalent in general practice and acute medicine. This problem is exacerbated by a general lack of *'boots on the ground'*, such as nurses and other healthcare professionals. Recent research by The Royal College of Physicians of London shows that 65% of trainee doctors reported permanent gaps in their training rotas. A further 95% reported that that gap is impacting on patient care, while 96% also reported gaps in nursing rotas.[9] In radiology an estimated 230,000 patients have been waiting more than a month for their imaging reports due to a shortage of diagnostic radiologists; this has impacts across the system.

These shortages coupled with increasing demand across primary and secondary care are unabated and puts patient safety and quality of care at risk. The UK must train more doctors and healthcare staff.

---

[7] Berwick DM, Hackbarth AD. Eliminating waste in US health care. JAMA. 2012 Apr 11;307(14):1513–6
[8] http://www.aomrc.org.uk/wp-content/uploads/2016/05/Protecting_Resources_Promoting_Value_1114.pdf
[9] https://www.rcplondon.ac.uk/guidelines-policy/underfunded-underdoctored-overstretched-nhs-2016

Given that around 70% of NHS provider costs relate to staffing[10], it is imperative that there is detailed workforce planning across the system to ensure that the NHS is sustainable and delivers the care patients will need.

a. What are the options for increasing supply, for instance through changing entry systems, overseas recruitment, internal development and progression?

Recruitment from oversees should not be used as an alternative to training an adequate number of doctors and health care staff in the UK. However, the recruitment of doctors and other healthcare staff from oversees provides a good solution where posts cannot be filled. The UK immigrations system must remain open and flexible enough to allow employers to recruit from outside the UK.

The Academy runs the Medial Training Initiative (MTI)[11], which is a national scheme allowing a small number of trainee doctors to enter the UK from outside the European Union. It enables them to benefit from training and devolvement in the NHS before returning to their home countries.

More can be done to encourage doctors from outside the UK to train in the UK, such as providing appropriate salary and job opportunities. Health Education England is currently developing a commercial scheme entitled the *International Fellowship Programme,* which will allow international trainees who are not eligible to train as EU students or through the MTI scheme, to train in the NHS.

b. What effect will the UK leaving the European Union have on the continued supply of healthcare workers from overseas?

The impact Brexit will have on the supply of NHS staff is potentially catastrophic. With an estimated 135,000 EU nationals working in health and social care system[12], it is self-evident that the levels of care currently provided could not be sustained if that workforce was lost. How Brexit will play out is unclear, but the Academy believes this should be at the forefront of the UK Government's mind during the exit negotiations. Early action is vital to reassure EU staff of their employment in the NHS to prevent significant departure of staff.

c. What are the retention issues for key groups of healthcare workers and how should these be addressed?

There are a large number of unfilled consultant posts across medicine, with some specialities particularly understaffed, 40% of new consultant posts in geriatric and acute medicine, for example, are unfilled. There is also a gap of 6.7% in the recruitment of consultant psychiatrists.[13] More can be done by Royal Colleges and the NHS to address retention issues.

Industrial action by junior doctors has shed light on the pressures in which NHS staff operate. The success and sustainability of the NHS will in part be dependent on the productivity and commitment of its workforce. It cannot be assumed that staff will remain resilient and

[10] http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/Workforce-planning-NHS-Kings-Fund-Apr-15.pdf
[11] http://www.aomrc.org.uk/medical-training-initiative/
[12] http://www.nuffieldtrust.org.uk/blog/fact-check-migration-and-nhs-staff
[13] http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/Workforce-planning-NHS-Kings-Fund-Apr-15.pdf

resourceful under continued pressure. More must be done to create a supportive and enabling environment for NHS employees. This need not cost a large amount of money, but rather is more dependent upon good leadership and a change in culture.

Part of that change must be the provision of high quality occupational health services to NHS staff (SEQOHS accredited). It is an essential element of the supportive environment for NHS staff, protecting them against workplace health risks, supporting their health and well-being which enables them to provide the best care for patients.

There is a particularly acute challenge for the recruitment and retention of NHS staff in remote settings, which demands its own set of solutions. The Academy and Nuffield Trust published a document in July 2016 which sets out some of the unique challenges and potential solutions for remote services, such new approaches to staffing and delivery models.[14]

4. How can the UK ensure its health and social care workforce is sufficiently and appropriately trained?

There is consensus that there should be greater flexibility in training to support moving across specialties and the opportunity for greater generalism, in order to meet the changing needs of patients. Anaesthetists' delivery of perioperative care is a good example of this flexible approach.[15] Royal Colleges are concerned about the lack of progress since the Shape of Training report was first published in 2013 and feel that Government must re-focus its attention on this if a truly sustainable NHS is to be achieved.

Models of service delivery and integration

5. What are the practical changes required to provide the population with an integrated National Health and Care Service?

There is widespread consensus that greater integration between all parts of the system; health and social care, primary and secondary care, public health and mental health is urgently required. There is also a consensus that the whole system should shift its focus from internal competition to genuine collaboration.

NHS England's New Models of Care – Vanguard Sites, supports the development and implementation of integrated models in certain areas across the country. It is clear that the exact new care model required in a particular area will differ across the country and will depend entirely on the needs of any given local population. The Academy is concerned that as new models of care develop through the Sustainability and Transformation Plans or other programmes, strategic decisions are not being made based on robust evidence and data. It is imperative that any fundamental change, such as reconfiguration of services, is based on clear evidence of what works best for the population it serves. Furthermore, major changes must be co-produced with the local population, or they run the risk of failing due to local opposition (more detail on this can be found in our response under the section on public engagement). The Academy's members recognise the need for clinicians to be part of the process of change and service redesign where there is evidence of a clinical case for it.

[14] http://www.aomrc.org.uk/wp-content/uploads/2016/08/Acute_care_remote-settings_100816-2.pdf
[15] https://www.rcoa.ac.uk/perioperativemedicine

Although, any new models of care or reconfiguration should be uniquely developed to suit the needs of a local population, it is clear that general practice will be heart of most proposals in order to support moving care away from acute settings and into the community. The sustainability of the wider NHS depends on sufficient investment and work force planning for general practice. For this reason the Academy supports the delivery of the *General Practice Forward View*.[16]

a. How could truly integrated budgets for the NHS and social care work and what changes would be required at national and local levels to make this work smoothly?

We would draw the Committee's attention to the report published by the King's Fund, which outlines in detail how an integrated budget of the NHS and social care could work in practice.

An efficient and effective integrated health and social care system will require more than integrated budgets. The right culture is also an essential component and this will only be created if effective local and clinical leaders are allowed to work collaboratively across a local area. It will require staff and leaders to think out outside their organisational silos and priorities and work in a truly patient centred way. The New Local Government Network published a report which outlines the enablers to support truly integrated and collaborate working across a local area; these suggestions range from soft enablers such as good communication to pooled budgets. We commend this to the committee.

b. How can local organisations be incentivised to work together?

As outlined above good leadership at a local level is key to collaborative working. However, there are a range of barriers which stop this from happening. The first, is that health and social care providers work to very different set of organisational and financial drivers. There is also no powerful incentive to work together.

The way in which we inspect and regulate the system must also change. The Care Quality Commission (CQC) inspects institutions rather than systems or pathways, and therefore does not reflect a patient's journey and does not support collaborative and integrated working. There must be a shift from service silos to system outcomes. There are, however, pockets of good practice which the CQC should recognise as part of their inspections and assessment of quality, for example the accreditation and registration schemes available for specific services, many of which are supported and run by medical Royal colleges and faculties, which support integrated and collaborative working in their inspections.

A single capitated budget would support integration and collaboration between health and social care by joining all resources and care for a local population. This would support a move away from a disease specific approach to care and put the patient at the centre of provision of care. This does require the cooperation of all providers and organisation in a local area and some local STPs are looking at ways at how this may work.

[16] https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf

c. How can the balance between (a) hospital and community services and (b) mental and physical health and care services be improved?

As already stated there in widespread consensus that care should shift from hospitals and into communities, not just in order to make the system more sustainable but also to meet the needs of patients and improve their outcomes. One barrier to delivering this which Royal Colleges have been highlighting to government for many years is the perverse incentives of payments by results. The government must eventually address this, if we are to deliver a sustainable system.

The single greatest initiative which can readdress the imbalance between mental and physical health is further investment in mental health. Mental health has been underfunded for decades and continues to be affected by the Government's austerity programme, particularly in the provision of child mental health and prevention paid for by local authority budgets. Spending on mental health services equate to 11% of the total NHS budget; this must be rebalanced. Also, roles such as psychiatric liaison services play a vital part in bridging the gap between mental and physical health but are in woefully short supply across the system.

Prevention and public engagement

6. What are the practical changes required to enable the NHS to shift to a more preventative rather than acute treatment service?

Prevention strategies must take a whole system approach. The range of public services which patients and the public access in a local area should collaborate to deliver the best outcomes for that population. For example, if local authorities and health services provide innovative prevention programmes, but local housing is sub-standard, then impact and outcomes for that particular population will be limited. A report published by the New Local Government Network outlines the way in which all institutions in a local area, which currently work in a separate and fragmented way can work together sustainably including NHS, local government, housing providers, schools, community pharmacies and charities.[17]

a. What are the key elements of a public health policy that would enhance a population's health and wellbeing and increase years of good health?

The future sustainability of the NHS will be predicated on tackling three key public health issues: obesity, particularly in children, smoking and alcohol consumption.

First, the Government should reverse the cuts to local authority public health budgets, which have created a clear danger to the future sustainability of the NHS. Between 2015 and 2016, 39% of local authorities in England made cuts to their local smoking cessations services and we know more will follow. This is truly a false economy.

The determinants which affect an individual's health are also environmental and social and any truly preventative system must take these into consideration. The Marmot Review published in 2010 outlines a range of practical policies which will support people to stay healthy throughout the course of their life.[18]

[17] http://www.nlgn.org.uk/public/wp-content/uploads/Get-Well-Soon_FINAL.pdf
[18] http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review

Despite the rhetoric around parity between physical and mental health, mental health prevention and treatment services continue to be cut. Good mental health should include a range of excellent perinatal services for mothers affected by moderate and severe mental health problems, as an important foundation for building resilience, and helping to give every child a mentally healthy start in life. Measures to tackle child poverty are important, as are programmes such as Sure Start, targeted mental health interventions in schools and supporting obese and often bullied children with their self-esteem challenges at the earliest opportunity. Systems and services to tackle these issues have all been cut by local authorities across the country. The substantial evidence of the benefits of commissioning public mental health programmes is contained in the Joint Commissioning Panel for Mental Health Guidance on Commissioning Public Mental Health services.[19]

d. Should the UK Government legislate for greater industry responsibility to safeguard national health, for example the sugar tax? If so how?

Royal Colleges and Faculties support the use of legalisation to regulate industry, where there is evidence that this is effective, for example, maximum sugar level, minimum unit pricing for alcohol and further tobacco levies. The Academy was extremely disappointed that the UK Government did not heed the advice of clinicians and its own public health advisors and instead implemented a voluntary target on sugar content. If we do not tackle childhood obesity with the seriousness it deserves, the will NHS face an existential crisis. The decision to water down the childhood obesity strategy suggests that the Government does not take prevention and the sustainability of the NHS seriously.

What are the best ways to engage the public in talking about what they want from a health service?

In light of the extreme financial pressures the health and care system in the UK are under and the fundamental changes required to create a sustainable system, there should be a 'national conversation' to determine how the shortfall should be funded and what reconfigured services should look like.

Co-production is essential to the successful delivery of any reconfigured service. There must be meaningful engagement with patients and public throughout a process, rather than formal consultation on an already designed proposal. The absence of genuine engagement and transparency creates suspicion among communities and often leads to opposition, which makes any change difficult to deliver. The Academy is concerned that failure of NHS England to publish the local STPs plans, demonstrates a lack of any genuine desire for co-production. There are already palpable suspicions around these plans at a local level which may have a negative impact on their development and delivery. Generally, the Government and the NHS must improve its public and patient engagement.

Clinicians must also engage with local patients and the public to make the clinical case for sustainability and reconfiguration; this will make any changes to the system to be palatable. Clinicians bring credibility to decision about health services and are seen as being motivated by a desire to improve outcomes for patients.

---

[19] http://jcpmh.info/wp-content/uploads/jcpmh-publicmentalhealth-guide.pdf

Digitisation of services, Big Data and informatics

8. How can new technologies be used to ensure the sustainability of the NHS?

By any measure, data and digital offer significant opportunities to transform and improve the health and social care systems. The NHS is too far from where it should be when it comes to making use of information and improving access to care for patients. Online consultations are a rarity, patient records remain largely paper based and IT systems that should be seamlessly integrated can vary not just between regions but within Trusts. Simply put, the NHS is not only way behind the curve when it comes to make use of the digital world the lack of investment is now costing the taxpayers money. The Academy set out the case for the need to redouble its efforts on making effective use of information, communication and technology in it's report i-care published in October 2013.[20]

a. What is the role of technology such as telecare and telehealth, wearable technologies and genetic and genome medicine in reducing costs and managing demand?

The thoughtful use of technology has the potential to improve the way we deliver healthcare. Technological developments such as tele-medicine, wearable technologies and genomic medicine can help patients and clinicians work together to improve the quality of care delivered, especially for those patients with complex needs. The Academy and Colleges have supported the production of the "Clinical Requirements 2020" document produced by the Strategic Clinical Reference Group (SCRG) which sets out the expectation from the clinical community of the digital environment in which we expect to work in by 2020. We are expecting this to be adopted by the National Information Board (NIB) and would commend it to the Review. If the requirements in the document are delivered we believe it will contribute to a transformation in the delivery of care.

b*. What is the role of 'Big Data' in reducing costs and managing demand?*

The use of big data is potentially life-saving. However, costs related to technology can be high and analysis can be complex. Although there may be potential long-term cost-savings from prevention and early diagnosis, a large amount of investment and on-going expenditure is required. Costs will not only include capital outlay, but also involve maintenance, updates and integration solutions. Tele-health initiatives will still require strong clinical support and staff training whilst wearables will require strategies around equipment calibration and maintenance. Understanding healthcare demand in relation to technology will also require a nuanced approach. Whilst there may be a reduction in demand for certain services, other unforeseen demands may arise. For example, wearables may record incidental or unexpected findings that will require clinical support.

c. What are the barriers to industrial roll out of new technologies and the use of 'Big Data'?

Big data in healthcare has the potential to identify trends and predict future demand. Comprehensive large datasets can be used in a number of areas, including research, pathway design and population health measurement. Data is unlikely to manage patient demand, but can ensure that services are optimised to meet that demand effectively and efficiently.

---

[20] http://www.aomrc.org.uk/publications/reports-guidance/icare-ict-in-the-nhs-1013/

The biggest barriers to the use of big data include quality, accuracy, integration and real-time rather than retrospective use of information. Data ownership and consent issues related to the use of data remain significant issues. Institutions should not own patient data, rather it is important that patients own their own data and that the NHS is the guardian of that data.

d. How can healthcare providers be incentivised to take up new technologies?

It is important that there is buy-in from key organisational decision makers in order for healthcare providers to take up new technologies. It is vital that the executive board of an institution understands the long-term benefits of technological investment and that this is not sacrificed for short-term cost-savings. It is also important that there is strong communication between board members, clinicians and information technology stakeholders to ensure that solutions are user friendly and tackle real problems on the ground. Current IT investment and procurement is centred around institutions rather that patient pathways. As the sustainability and transformation plans grow, future procurement models should focus on integrated solutions.

e. Where is investment in technology and informatics most needed?

There are a number of areas of investment with regards to informatics and technology. The most important of these relate to data infrastructure and workforce. Developing a strong data infrastructure through developing information models and interoperability initiatives can ensure long-term sustainability across the health system and ensure minimal vendor lock-in. Investment in workforce is also a key step in developing effective technology and information systems within the NHS. Well-qualified clinicians, who lead a clinical-IT workforce, are an important step in ensuring the quality and sustainability of these initiatives. It is also vital that the workforce is engaged to understand and improve processes within institutions. Investment in technology to improve processes will only have a small benefit if the underlying flaws within these processes are not addressed. Health technology and information will be most effective when clinicians are engaged in its development, procurement and use.