



Legacy-Parliament 2010-15: Government Response to the House of Commons, Science and Technology Committee Ninth Report of Session 2014-15

Presented to Parliament
by the Secretary of State for Business, Innovation & Skills
by Command of Her Majesty

July 2015

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Summary

The Government welcomes the opportunity to address the issues raised in this report on its support for science and the use of scientific evidence in the development of policy. We have considered the recommendations made by the Select Committee and our responses are set out in this document.

Within a modern, knowledge driven economy, the creation and exploitation of new knowledge are key drivers of sustainable, long-term growth. The exchange of ideas created, through research, between research organisations, business and the wider community, enable innovative new products and services to be developed and brought to market. Science and innovation also have significant roles to play in ensuring that we are well placed to meet the significant societal challenges that the UK will face in the future

The UK research base is the most efficient in the G8 in terms of citations and publications and first or second in the world in terms of excellence in most disciplines. The Government Office for Science also works closely with departments to ensure that their policy-making is supported by the best scientific advice.

Whilst we are proud of our achievements, we are not complacent. We will continue to monitor the effectiveness of our support for science and the use of scientific evidence to inform policy-making.

Scientific Advice and Government

1. How the President receives independent scientific advice with respect to EU legislation may be of interest to our successor Committee. (Paragraph 16)

2. Our successor committee may wish to consider such an inquiry early in the next Parliament given that it may require an extended piece of work that becomes less tenable as the Parliament progresses. (Paragraph 17)

Government response

- The Government recognises the importance of good quality scientific evidence and advice as an important input to policy making

3. We are conscious that the challenging financial landscape is likely to persist for a number of years and, in light of the Government's Science and Innovation Strategy and spending review 2015 settlements, our successor committee may wish to take a more detailed look at the effects on science and technology of constrained public finances across all Government departments as well as challenging the curious definition of 'science' in that strategy. (Paragraph 19)

Government response

- Science and innovation are among the UK's great strengths, and Government recognises their value as a crucial driver of economic success. During the last Parliament the Government maintained a strong commitment to funding research and innovation, ensuring that spend on science was ring-fenced while delivering a total of £98 billion planned discretionary reductions in spending across Government.
- In addition, the Government's manifesto commitment to invest £6.9 billion in the UK's research infrastructure up to 2021 will deliver new equipment, new laboratories and new research institutes.
- Decisions on wider funding will be made during the Spending Review which will examine where best to make robust investments in science and research in particular to support economic growth. At this stage we cannot prejudge the Spending Review outcome.
- Government also needs to consider the R&D needs of different departments. It is important to make sure that R&D spending by departments is properly prioritised and is not unduly deprioritised in favour of short-term pressures. There has, for some time, been a requirement that departments should consult the Government Chief Scientific Adviser and HM Treasury, in advance of any potential cuts to research budgets or expenditure, including those that have implications for the funding of cross-cutting research.

4. We have found that a lack of long-term funding for fundamental (data building and conservation) research poses risks to our ‘infrastructure of knowledge’, an issue we encountered particularly in respect of marine science. Given continuing spending constraints, we expect that this will be an ongoing issue during the next Parliament. (Paragraph 21)

Government response

- Defra supports long-term (several for more than 20 years) marine data collection and conservation projects such as:
 - Monitoring of hazardous substances and biological effects in marine species and the marine environment;
 - Stock assessment of marine and migratory fish;
 - Monitoring of protected species e.g. cetacean bycatch (the incidental catch in fishing gear) and risks and threats to cetaceans under the UK Cetacean Strandings Investigation programme;
 - The Continuous Plankton Recorder survey for monitoring marine biodiversity and environmental change in the world's oceans.

5. The role of Government in leading national debate on issues such as climate change and genetically modified crops will be undermined if it cannot point to transparent, authoritative and independent science that the public can trust. (Paragraph 25)

Government response

- The Government is committed to meeting our climate change target of an 80% emissions reduction by 2050 as set out in the Climate Change Act. The Act is the most ambitious climate change legislation in the world.
- This position is founded on a wealth of robust international science, as well as the UK's world-class science and intellectual capital on climate change. In particular, since the Met Office Hadley Centre was opened in 1990 the UK has been a leader in the science and evidence of climate change.
- There is a multitude of high quality sources of information on climate change already in the public domain, not least from the Intergovernmental Panel on Climate Change (IPCC). Studies indicate that scientists are better placed to communicate this information than Government. However, we accept that Government has an important role to play as a catalyst and facilitator of effective communication.
- Progress has been made in this area, including improvements to how information on both climate science and Government activities to tackle climate change is communicated through the GOV.UK website. DECC plans to meet with relevant experts to consider how best to improve the communication of climate science, and

will explore how we can work with key organisations such as the Met Office and Royal Society.

- In relation to genetically modified crops, the Government has consistently sought to inform the public debate by referring to authoritative, independent scientific advice, such as that provided by the Council for Science and Technology, the European Academies Science Advisory Council and the Advisory Committee on Releases to the Environment.

6. We recommend that our successor Committee keep a watching eye on science qualifications and how schools and universities develop the scientists and engineers we so desperately need. (Paragraph 28)

Government response

- The Government is keen to support and encourage STEM education in schools, universities and through professional and technical education. School-level programmes to address this are outlined in response to recommendations 26-28.
- The Government has asked Sir William Wakeham to lead a review looking across the STEM degrees to explore where there might be problems with graduate employment and to propose where further work might be needed to explore issues in depth. The Review is building on a more targeted review of computer science degree provision being led by Sir Nigel Shadbolt.
- The Government is committed to three million new apprenticeship starts in this Parliament and will roll out many more Degree apprenticeships, which combine a world-class degree with an apprenticeship. Over 1200 employers from over 100 sectors have been trailblazers in developing apprenticeships. These new apprenticeships are in a broad range of sectors including Aerospace, Automotive and Digital Industries.
- National Colleges will provide specialist higher level vocational training in sectors critical to economic growth and where there is a recognised skills gap. They will be employer led, and will set industry standards for training within their particular sector based on emerging and future technology, using cutting edge technology and state-of-the-art equipment. Colleges announced so far are closely aligned with engineering technology sectors and are expected to be established and start taking on students over the next two years.

7. Despite the Government officially advocating the importance of scientific advice and evidence as a key input in the policymaking process, our work during this Parliament has demonstrated, on a number of occasions, that this is not always reflected in Government practice. The use of scientific research and analysis in policymaking is generally understood and practised by certain departments, for example the Department of Health and the Department for Business, Innovation & Skills. However other departments, notably the Department for Education, the Department for Environment, Food & Rural Affairs and the Home Office, appear either not to appreciate the value of scientific advice and evidence in policymaking or simply do not have the capability, experience or processes in place to utilise it. This remains of great concern to us. (Paragraph 29)

Government response

- The use of the best scientific evidence is recognised as an essential element of effective policy-making. The Government Office for Science continues to work with all Departments, including those listed, to ensure that the appropriate structures are in place. This includes the cross Whitehall network of Chief Scientific Advisers as well as Scientific Advisory Committees and Councils, giving policy-makers access to the very best in scientific and engineering knowledge from the UK and international research bases.

Cabinet Office

8. We welcome the Administrative Data Research Network and the associated research centres but note the lack of any commitment to allocating ministerial oversight to the use of social science. It remains our position that both the commission and utilisation of social science by Government would benefit from direct Ministerial responsibility. (Paragraph 37)

Government response

- The Government notes this recommendation. Our priority is that we have people who can champion effective use of social research and social science at the very highest levels in Government. A number of social scientists sit on the Heads of Analysis group chaired by Sir Nicholas Macpherson, including Dave Ramsden (Chief Economist), David Halpern (National What Works Advisor) and Jenny Dibden (Head of Government Social Research). As heads of their professions, they provide oversight to ensure the provision of robust social science advice within Government. In addition, two incumbent Chief Scientific Advisors are social scientists, Dr Tim Leunig at DfE and Professor Bernard Silverman at the Home Office.

Business, Innovation and Skills

9. We agree with the Minister and urge that this same view continues within Government to ensure that scientific evidence and advice is at the heart of policymaking. (Paragraph 38)

Government response

- As noted in the response comment 2 (page 5), the Government continues to recognise the importance of good quality scientific evidence and advice as an important input to policy making.

10. We note the piecemeal relocation of roles and responsibilities from the Department for Business, Innovation & Skills to the Cabinet Office and vice-versa and consider that it dilutes the source of scientific advice in Government. We, again, strongly re-iterate our recommendation that GO-Science should sit within the Cabinet Office so that it benefits from scientific advice and evidence being at the centre of Government. (Paragraph 40)

- As set out in the response to recommendation 55 (page 40), Government believes there are strong benefits to GO-Science being located in the Department for Business, Innovation and Skills

11. We strongly support the Minister's position regarding science funding and urge this Government and its successor to deliver on the Minister's commitments. Science funding and the 2015 spending review will undoubtedly interest our successor committee. (Paragraph 42)

Government response

- The Government notes the Committee's recommendation. As stated, the 2015 Spending Review will determine future funding allocations for science and innovation and it would not be appropriate to prejudge the spending review process at this time.
- Further, the Government recently published its productivity plan, 'Fixing the foundations: Creating a more prosperous nation'. Specifically on science, it said: The UK's system of funding science is central to ensuring the best researchers have the flexibility to innovate and to maintain the UK's position as a world leader. The commitment to excellence, facilitated through a dual support system, must remain absolute. But the wealth and breadth of possibilities in science and innovation mean

that prioritisation is needed. The government will ensure these strategic choices are made through:

- investments in national infrastructure; the government will deliver on the science capital commitment, investing £6.9 billion in the UK's research infrastructure up to 2021
 - ensuring the UK's excellent science has a focus on those areas with greatest potential, from genetics to quantum technology
 - clear strategies in cross-departmental areas of research interest such as health, where the government works closely with medical research charities. The Accelerated Access Review offers a significant opportunity to improve quality of care and cost effectiveness, and the UK is leading the fight against the global health risk posed by antimicrobial resistance
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- It is crucial that the UK supports excellence wherever it is found. The government will therefore invite universities, cities, Local Enterprise Partnerships (LEPs) and business to work with the government to map the strengths of different regions through a series of science and innovation audits. These will provide a new, powerful way to build on different regions' strengths and to maximise the economic impact from the UK's research base.
 - Sir Ian Diamond's review highlighted that collaboration has an important role to play, both in improving the efficiency and supporting the quality of research. The government encourages universities to strengthen local collaboration wherever this will achieve these objectives.
 - The government will also introduce new Regius Professorships in order to recognise excellence in universities across the UK. The government will launch a competition later this year, with a view to making awards in early 2016 to celebrate the Queen's 90th birthday.
 - The government has asked Sir Paul Nurse to examine how Research Councils can evolve to support research in the most effective ways. His independent review, which will report later this year, will help to inform the government's decision-making in the Spending Review.

12. We welcome the additional funding that the high value manufacturing Catapult will receive from the Government. At the same time we remind the Government that one of the intrinsic values of the Catapult centres is that they operate independently from other Government research and commercialisation initiatives and higher education institutions, and should continue to do so. (Paragraph 44)

Government response

- Catapult Centres are independent, private sector organisations. They operate at arms-length from Innovate UK and independently of government. They collaborate with academic institutions and other Research and Technology Organisations, but they are not intrinsically linked to them. It is important Catapults retain their independence to keep industry confidence and engagement and therefore their ability to leverage private investment.
- The Catapults receive one third of their funding from government, one third from the commercial sources and the final one third from participation in collaborative R&D projects, competitively won. Academic and other research institutions will collaborate with Catapult on this type of project and in other areas of their work.

13. The innovation infrastructure developed by this Government is a solid starting ground for progress to be realised. We agree with Greg Clark that it will take time to judge the success of the Government's policies to assist businesses to commercialise research and to grow. (Paragraph 45)

Government response

- The Government recognises this is an important issue and work on evaluating different approaches to supporting commercialisation is being taken forward.
- The impact of this support on business innovation is positive. Businesses that receive public funding for innovation are significantly more innovative than comparable non grant-holding businesses. Receiving a grant increases a business's own spending on R&D by 30% and makes them over 40% more likely to introduce novel products to market, 40% more likely to engage in product innovation and almost 30% more likely to employ STEM graduates.
- Innovate UK is implementing a comprehensive programme of evaluation activity across its activities. Interim or final reports will be published this year covering Knowledge Transfer Partnerships, Smart, the Biomedical Catalyst and SBRI. Evaluations are ongoing or are commencing covering Innovation Platforms, Catapults, and Innovation Vouchers.

14. We recommend that the Government set out, in its response to this Report, what work is being done to increase small and innovative companies' access to equity markets and to measure the impact of Catapult centres on increasing the finance available to SMEs, as we mention in paragraph 23 of this Report. (Paragraph 46)

Government response

- The Government's Business Growth Service provides businesses with help on accessing finance, providing expert advice on all the sources of external finance available, including debt, equity, and grants, to support growth and help plan future investment.
- We have established the British Business Bank to help make business finance markets for smaller businesses work effectively and dynamically, allowing them to prosper and grow. Business Bank programmes include a number of venture capital finance initiatives designed to support a vibrant and diverse capital market. These include:
 - Over £112 million invested since May 2010 in 56 high growth companies through the Business Angel Co-Investment Fund.
 - £387 million of public and private funding committed to Enterprise Capital Funds, with £213 million invested in 150 smaller businesses. A further £400 million was made available for this programme in 2014.
- As well as providing direct funding, Innovate UK also provides the businesses it supports with help to access private funding. This is done in a number of ways. SMEs who receive Innovate UK's funding are connected with the Government's Business Growth Service, which may include coaching on access to finance. Innovate UK has also worked with the Business Growth Service to create the GrowthShowcase, where selected high-quality, investment ready SMEs (currently around 70) are showcased to potential angel and VC investors (currently around 200 registered investors). In addition, Innovate UK sponsors Venturefest events in 9 locations around the UK, which enable face-to-face engagement between innovative businesses and the investment community, and run other sector-specific and cluster-based face-to-face showcasing events.
- The Catapults do not have a specific brief to assist with access to equity finance. However, there is a growing number of examples where the Catapults have provided vital support to unlock private sector investment and inward investment for young companies. For example the Transport Systems Catapult is working with industry, large and small, to identify and de-risk opportunities in the global Intelligent Mobility market. The success of the Catapult is dependent on businesses being able to access the capital they require to take advantage of these opportunities. Although the

role of the Catapult is not to provide capital, this does mean that the Catapult has a role to play in stimulating the provision of capital.

- When the initial Catapults were set up by Innovate UK, an agreed set of key performance indicators (KPIs) were established to monitor the performance of Catapults against their primary aim of supporting innovation by UK business. These indicators monitor the performance of the Catapults against the forecasts set out in their five year delivery plans. However, they do not capture the outcomes and impacts of the Catapults, the most important of which is, ultimately, economic growth.
- Officials at Cabinet Office's Implementation Unit, HM Treasury and Innovate UK have subsequently worked together to review the monitoring and evaluation programme and are working to set up and deliver a long-term impact evaluation of the Catapult programme that will provide robust evidence of the impact of the policy.

15. Although there has been some progress in the proportion of Government contracts awarded to SMEs and innovative businesses, there is still much progress to be made to ensure that these businesses have equal access to public sector contracts. There is an added incentive for Government to procure from small businesses that it has indirectly funded, for example through Catapult centres, to ensure a positive return on the public investment. (Paragraph 49)

Government response

- We have delivered on the ambition that the previous administration set for itself in 2010, that 25% of its spending should go to small and medium sized businesses by 2015. Overall, direct spend increased from 6.5% in 2009-10 to 10.3% in 2013-14, and with a further 15.8% indirect spend through the supply chain, this gives a combined spend of 26.1%.
- Building on this success, we have set a new ambition, that 33% of central Government spending should go to small and medium sized businesses by the end of this Parliament (2020). Spending through Small Business Research Initiative (SBRI) by Departments will contribute to meeting this ambition.
- The Small Business, Enterprise and Employment Act includes an enabling power which allows the Government to introduce a range of measures to make procurement more streamlined and efficient and reduce barriers, as the need arises.
- We continue to launch new SBRI competitions providing opportunities for SMEs. By April 2015, a total of 2200 contracts worth over £270 million have been awarded since 2009. The Small Business Research Initiative is delivering good results – for example, in 2012, the National Oceanography Centre launched a competition to develop a

long-endurance marine unmanned surface vehicle. Autonomous Surface Vehicles (ASV) developed the C-Enduro vehicle and the company has grown from five to 40 staff in three years. MOST AV were also awarded an The Small Business Research Initiative contract in the same competition, developing the Autonaut vehicle, and have also seen their workforce increase from two founder members to 12 staff. Both companies have been successful in getting their product to market by securing orders for their vehicles.

16. There is still a long way to go until women and minority groups are adequately represented in higher education institutions and on the management boards of Catapult centres. We were encouraged by the Minister's strong statements on this matter and the Government should set out, in its response to this Report, what action it is taking to address this issue, what progress is being made and how it will monitor progress going forward. We note that none of the six preferred candidates chosen during this Parliament for us to consider at pre-appointment have been women. In the interests of transparency, we recommend that each Government Department publish suitably aggregated equality data on candidates shortlisted for appointment to posts subject to pre-appointment hearings by Parliament. (Paragraph 54)

Government response

- The Government recognises that diversity is an important issue and works closely with its partner organisations to ensure that new appointments reflect this.
- Although there is an encouraging gender mix across the Catapult Boards and executive team level there is still work to do. It will take time for this to come through in the appointment of Chairs and CEOs. Twenty three percent of the members of the Catapult Boards are women as are twenty onepercent of the executive teams.
- All of the Chairs are very aware of the benefits and need for diversity in their new organisations and are actively encouraging this. In their early days the Catapults are drawing on the expertise of the industry around them and their mix, to some degree, matches the surrounding industry.
- Innovate UK will continue to work with the Catapults to ensure that they start to lead in this area and continue to increase the diversity mix across the network. In May 2015, Ruth McKernan was appointed as the new CEO of Innovate UK and has been asked by the Minister to sit on his Diversity Steering Group to drive progress in this area.
- It is true that the Research Council Chairs are currently all men. However, recent action to improve the overall gender diversity of Research Council governing Councils (i.e. their boards) is starting to make a positive impact. When all the new

appointments made earlier this year have taken effect the gender balance of the governing Councils taken together will move from a 72% male, 28% female ratio in July 2014 to a 60% male and 40% female ratio in September 2015. Notably two of the Research Councils' governing Councils will have a 50:50 gender balance in September 2015.

17. The Government's Space for Smarter Government Programme is a welcome initiative and we encourage the next Government to harness the opportunities that space technology offers the public sector. (Paragraph 55)

Government response

- The 'Space for Smarter Government programme' (SSGP) is an exciting and challenging programme operating to educate and inspire non-commercial communities to the multiple uses of satellite applications and data, as well as dispel the myths that space is too costly, too technical and too difficult to understand.
- With £1m invested in the first year, SSGP has produced greater awareness and understanding across Government with focal areas developed in Environment, Rail Transport, Natural Hazards and Local Authorities. SSGP has supported Defra to create a roadmap that sets out a detailed approach to deliver its vision that "by 2020 satellite data are playing an indispensable role in policy development and operations across the Defra network". In addition, two calls have funded 15 projects (many with SMEs) with new applications under development.

18. We are comforted by Greg Clark's view that the UK having a director-level representative at the European Space Agency (ESA) has been understood and well taken by the leadership of ESA. We hope that this will result in an actual UK appointment at the upcoming reshuffle of the ESA's management. (Paragraph 56)

Government response

- The new Director General of the European Space Agency (ESA), Professor Jan Woerner (DE), took up post on 1 July 2015. We have already engaged in early discussions on reform of ESA and have been clear that the UK expects at least one Director in the new cadre of directors beneath the DG. We are identifying a suitable opportunity to reinforce this message at ministerial level. The new management structure is still being developed and the number and portfolios of the new set of directors is still under discussion; we believe we have capable UK candidates for more than one role. The new set of Directors is expected to be appointed in early 2016 when existing contracts expire.

19. While we welcome the Government's investment in the Square Kilometre Array, the Science & Technology Facilities Council's withdrawal from a number of northern hemisphere research-grade telescopes remains of great concern. We note that the drop in astronomy and particle physics funding following the 2007 reorganisation of the Particle Physics and Astronomy Research Council has been perpetuated. We ask that the Government re-examine the funding decisions made in these areas of science. Our successor Committee should be informed as to any change in policy in this regard. (Paragraph 58)

Government response

- Under the long-standing Haldane Principle, prioritisation of research proposals within an individual Research Council's budget allocation is not a decision for Ministers. Decisions on investment in these and other areas of science will be considered in light of the outcome of the next Spending Review. Research Councils will need to ensure that the views of those with an interest in the potential outcomes of the research are sought when setting their priorities. The Government has also asked Sir Paul Nurse to examine how the Research Councils can evolve to support research in the most effective ways, and we look forward to his report.
- In the case of the Science and Technology Facilities Council, their funding is allocated in three budgetary partitions (international subscriptions, UK large facilities and core programme) to provide future budgetary stability.
- It is the Government's role to take a view on the overall level of funding to science and research. Over the last Parliament, the Government ring-fenced the science budget while making difficult choices to reduce spending in other areas. Now the Government will invest new capital on a record scale – £6.9 billion in the UK's research infrastructure up to 2021 – to ensure the UK continues to have world-class science facilities and remains the best place in the world for research intensive businesses to invest.

Education

20. We welcome Oliver Letwin's response and request that the Government update us on the action it is taking on this matter and its outcomes. (Paragraph 59)

Government response

- The Chancellor of the Duchy of Lancaster, Oliver Letwin, has since written to a number of permanent secretaries to ask them about the provision of Chief Scientific Advisors across departments, and is now considering their responses. He will respond in due course.

21. We hope that Nick Gibb's assertion that the department's new CSA will ensure that the department uses rigorous evidence in policymaking proves true and that the CSA is able to achieve this in just one day a week. (Paragraph 60)

Government response

- We note this conclusion.

22. We accept that the public finances have faced cuts under this Government, however a 63% cut in the department's research spending between 2008-09 and 2011-12, and a 59% cut in 2013-14 against the 2008-09 baseline, is drastic by any measure. What is more, the department has pushed through radical reforms to the education system under this Government: although the Government recognises the importance of research in the context of education in its Science and Innovation Strategy, we conclude that evidence is still not as central to the department's policymaking as it should be. (Paragraph 62)

Government response

- The Department for Education is committed to evidence based policy-making and invests substantially (around £14m a year) in external research and surveys. Projects include major robust longitudinal studies that follow children through time to assess the impact of policy and a range of other factors on children's outcomes. It also includes the Department's major contributions over time to regular international studies including PISA, TIMSS and PIRLS¹, examining trends in children's knowledge and skills across countries. International evidence has been extremely important in shaping policy development as the Department has sought to learn from the best

¹ (PISA = Programme of International Student Assessment, PIRLS = Performance in International Reading Literacy Study and TIMSS = Trends in Mathematics and Science Study)

education systems in the world and monitor progress against international benchmarks.

- As well as evidence-based policy making, the Department has invested substantially in promoting evidence-based front-line practice. It established the Education Endowment Foundation (EEF) in 2011 with an endowment of £125 million (this has been topped up with an additional £12 million for specific programmes including £1 million to promote evidence-based teaching). To date, the EEF has awarded £57 million to 100 projects working with over 620,000 pupils in over 4,900 schools throughout England. The Foundation robustly evaluates all funded activities, where possible using randomised controlled trials, and to date has published 45 evaluation reports (including 33 from randomised controlled trials). The results of EEF-funded projects are then disseminated to schools and the wider public. The EEF also maintains and updates the Teaching and Learning Toolkit, and has engaged in other activities to support schools to use more evidence-based practice.

23. Despite the apparent popularity of “exhortation” at the Department for Education, at the expense, it appears, of Government “facilitation”, and despite our numerous interactions with the department during this Parliament, we are none the wiser as to what “exhortation and facilitation” means in practice and what benefits result from it. Furthermore, we are not convinced that Ministers are unable to pursue their policy aims by means other than “exhortation and facilitation”. We recommend that Ministers exercise their authority to ensure that the policies they support are delivered by the relevant agencies. (Paragraph 63)

Government response

- We are firmly convinced that schools and teachers are best placed to decide what is best for their students. Evidence from other countries points to a school led system being the most effective way for an education system to move from good to great and beyond.
- The Conservative Party manifesto set out the aim of making Britain the best place in the world to study maths, science and engineering.
- This objective will be achieved through key fundamental reforms such as more rigorous and challenging curriculum and qualifications. The new maths GCSE will be introduced in September 2015 and the new science GCSE from September 2016. New science A levels will be introduced from September 2015 and the new maths A levels from September 2017.
- The Department for Education has also committed significant funding to this area. This includes £67m over the next five years to recruit and train more science and maths teachers, and upskill the existing workforce. We are also continuing our

support to schools delivered through a number of organisations to improve participation in maths and science, to ensure existing teachers and technicians have the knowledge and skill to teach the subjects effectively, and to promote the benefits of studying maths and science.

24. This view of the science education community reflects a flawed approach to engaging with science education experts throughout the reforms process. We continue to be highly concerned about how evidence is collated and used to inform policy in the Department for Education. (Paragraph 66)

Government response

- We have consulted widely and frequently with subject experts during the development of the new curriculum and qualifications.

25. The Government and Ofqual should update our successor Committee on developments in this area. (Paragraph 69)

Government response

- The Secretary of State has discussed the new arrangements for practical science at both GCSE and A level with Ofqual's Chief Regulator. She has stressed the importance on engaging with the science community in implementing the new arrangements; and of evaluating the impact of the changes. Ofqual are working closely with the science community in taking this work forward.

26. The Government's approach to science facilities in schools is wholly unsatisfactory. Whether it be practical science examinations, science field work and field trips, laboratory apparatus, technicians or school buildings, there is a chronic failure by the Government to create an effective environment for practical science in schools. We strongly recommend that this is pursued during the next Parliament. (Paragraph 74)

Government response

- The Government is acting to improve the environment for practical science in schools by investing in school buildings and improving science teaching.
- There has been significant investment in education spending at a time of difficult financial decisions for the country. Under the coalition Government the core schools budget was protected in real terms. This included the introduction of the pupil

premium (worth £2.5billion in 2015-16) to provide more funding for pupils from disadvantaged backgrounds and the allocation of an additional £390million in 2015-16 to local authorities considered to have been unfairly funded in previous years. This Government has committed to continue to protect schools funding over the Parliament.

- It is for schools to decide how to allocate their resources. School leaders are best placed to take account of local circumstances and to use their funding to meet the individual needs of their schools and pupils.
- With regard to school buildings, we have announced £4.2billion of capital spending up to 2018 to improve the condition of the school estate.
- High standards of teaching are critical to the provision of good quality practical work in science. The Department for Education is taking action to increase the quality of science teaching in schools such as bursaries and scholarships to recruit the best graduates.
- Science professional development is available through the National Science Learning Network. This is supported by £5.3m of funding in 2015-16, alongside funding from charities and industry to deliver provide high-quality professional development through 51 local partnerships and bursary support. Many of these programmes support the teaching of practical science.
- Other DfE funded programmes such as the Stimulating Physics Network (£2.15m in 2015-16) and the Triple Science Support Programme (£1m in 2015-16) support the importance of practical work in science education as part of their work to engage more pupils in science at GCSE and A level.

27. Although the Government promised to upskill the country's science teachers, evidence from the Royal Society, Field Studies Council and SCORE suggests there is still significant work to do. (Paragraph 75)

Government response

- The Government is doing much to ensure teachers have the skills and knowledge to deliver high quality science education.
- The Department for Education funds the National Science Learning Network which delivers high quality Continuing Professional Development for science teachers in primary and secondary schools, focusing on supporting key areas of science education such as the new curriculum and practical work. The network comprises over 50 local science learning partnerships, which bring together Teaching Schools

and other outstanding schools, universities, independent schools, FE and sixth form colleges, employers and industry to deliver science CPD.

- In addition to committing to recruit and train an extra 2,500 and upskill 15,000 maths and physics teachers over the next 5 years we have also increased the top level of bursaries for postgraduate teacher trainees in chemistry and physics to £25,000 in 2015/16. We are also continuing to work with the Institute of Physics and the Royal Society of Chemistry to offer teacher training scholarships worth £25,000 to attract the best graduates into teaching.

28. We agree with the Government that there is much work to be done to ensure that young people receive high quality careers advice that will enthuse them to pursue a career in engineering. Unlike the Minister, we consider this country's shortage of engineers to be more than just a "messaging issue". (Paragraph 78)

Government response

- The Government takes the shortage of engineers very seriously and we have worked with engineering community, including employers, educators and the professional institutions, to implement the recommendations of the Perkins Review of Engineering Skills in full.
- We want to see improvements to the quality of careers advice and guidance available to young people, with many more schools and employers working together to provide excellent support.
- We have published statutory guidance for schools which is clear about the importance of STEM subjects. It states that schools should ensure that, as early as possible, pupils understand that a wide range of career choices require good knowledge of maths and the sciences. The guidance also highlights the importance of introducing pupils, particularly girls, to professionals from occupations that require STEM qualifications.
- Christine Hodgson (Chair of Capgemini UK) has agreed to chair a new, independent company, that will help businesses and schools to engage with each other more easily so that young people benefit from the inspiration and guidance they need to leave school or college ready to succeed in working life. The company expects to announce further details in due course.
- Encouraging more young people to study maths and physics A level is vital if we want to increase numbers studying engineering at a higher level and consider a career in engineering. Since 2010 there has been a 16% increase in the number of young people studying physics A level and a 13 % increase studying maths. Maths A Level is now the single most popular A Level choice.

- 25 engineering Tech Awards have been approved for the 2017 Key Stage 4 performance tables, and 88 engineering qualifications (Technical Certificates, Tech Levels, Applied General Qualifications) have been approved for inclusion in the 2017 Key Stage 5 performance tables.

29. *The Minister did not give us confidence that research councils carry out outreach activities in schools to inspire children to study the sciences. He did, however, agree that the National Schools' Observatory carries out valuable work in enthusing children about science: we recommend that our successor committee ensure that it is sufficiently funded to continue doing so. (Paragraph 81)*

Government response

- The research councils support a wide range of outreach activities with schools. The RCUK funded School University Partnerships Initiative (SUPI) <http://www.rcuk.ac.uk/pe/PartnershipsInitiative/> is a good example. The SUPIs are developing equitable and sustainable partnerships with schools, providing direct opportunities for pupils to engage with researchers, research infrastructure and undertake research themselves.
- RCUK also support Nuffield Research Placements which provide over 1000 students each year with the opportunity to work alongside professional scientists, technologists, engineers and mathematicians.
- RCUK sponsors the Best Use of Research prize at the National Science and Engineering Competition, the finals of which are held at the Big Bang Fair. RCUK also organises visits to one of the world-leading research facilities for the winners of the *UK Young Scientist of the Year and UK Young Engineer of the Year awards*.
- Further support is provided to teachers to ensure they have access to current research through mechanisms such as the *Bringing Cutting Edge Science into the Classroom* teacher CPD programme and our work with SchoolScience, enhancing teacher's knowledge in specialist areas and facilitating in turn their abilities to enthuse the next generation of researchers.

Environment, Food and Rural Affairs

30. Five years after publication of its marine science strategy, and nearly two years after we made recommendations on this issue, we are dismayed that the Government is yet to have a formal implementation plan for its marine science strategy. (Paragraph 82)

Government response

- Over the past few years the Marine Science Co-ordination Committee (MSCC) and its subgroups have focused on key priorities, such as development of a new UK-wide marine monitoring programme (published in August 2014) under the Marine Strategy Framework Directive (MSFD).
- MSCC has also developed a new strategic implementation plan for 2015-2025, which was agreed by members at its March 2015 meeting and has been published on the MSCC website.

31. While we would normally applaud the efforts made by the Government to compile a better evidence base for marine conservation zones (MCZs), in this case the Government has muddied the water. Does designation of an area as a MCZ require the ‘best available evidence’, ‘robust evidence’ or evidence that provides ‘reasonable certainty’? In conservation terms, the delay caused by evidence collections means a greater risk that the marine feature will become more degraded: MCZs should be designated ahead of any ‘further analysis’, as was intended by the original legislation. As part of developing a coherent network of marine protected areas there may also be value in protecting areas where significant features no longer exist but have done previously. (Paragraph 85)

Government response

- Defra have taken, and will continue to take, decisions based on sound evidence. It is vital that there is an adequate evidence base for each individual site to ensure successful, well-managed MCZs. A strong evidence base is also essential in order to support decisions that may have social and economic impacts, effect on people’s livelihoods and result in enforcement and monitoring costs that fall on the tax payer.
- In order to be designated, there needs to be reasonable certainty of the presence and extent of the feature (habitat or species) of interest within the site. This is not a high evidence standard. A more precautionary approach has been taken towards some higher risk features which have been designated with less supporting evidence.

32. Marine conservation zones are a prime example of why the Government needed an implementation plan for its marine science strategy. Although its approach does seem to be slowly improving, the Government continues to muddle through the marine conservation zone process and needs to make a greater effort to involve all stakeholders from the early stages of the designation process. (Paragraph 87)

Government response

- Defra commissioned stakeholder-led groups to identify the original recommendations for possible Marine Conservation Zone (MCZ) sites. Throughout that process, and since, there has been extensive engagement with stakeholders, including through the formal public consultations before MCZs are established.
- Feedback from the first tranche of MCZs indicated a need for more information about management to be published as part of the consultation package. In response to this, we provided further details for each site proposed in the second tranche. These summaries, which incorporated information gathered from stakeholders in the pre-consultation phase as well as evidence from regulators, provide details of those activities which are likely to require management, together with an indication of what this is likely to entail. The summaries also include details of those activities which are unlikely to be subject to management.

33. The process of designating marine conservation zones has endured significant delays. The department went to consultation on the second tranche of MCZs at the end of January 2015; it is hugely optimistic for the Government to think that it will complete designation of their third, and final, tranche in 2016. (Paragraph 88)

Government response

- The Government has made good progress on designating a Blue Belt of MCZs around our coasts. The first tranche of 27 MCZs was designated in 2013, and a consultation on 23 sites proposed for the second tranche closed in April this year. We will designate the second tranche by January 2016.
- We have committed to completing the network of MCZs, to create a Blue Belt of protected sites around our coasts. Further details on our plans to achieve this will be announced in due course.

34. We agree with the Minister that long-term research and data collection requires security of funding in the long term. (Paragraph 89)

35. We welcome the Government Chief Scientific Adviser's recognition of the importance of long-term data collection and the National Oceanography Centre's involvement in the Government's thematic review, although we remain disappointed by the time it has taken to conduct the review. We recommend that the Government conclude and publish its thematic review urgently. (Paragraph 90)

Government response

- The Royal Society launched its report on “Observing the Earth – Expert Views on Environmental Observation for the UK” on Thursday 9 July 2015. The project was commissioned by the Government Office for Science. The report highlights barriers and opportunities to more effectively exploiting observational data.

36. We are disappointed that more progress has not been made since our report and that the use of industry data is only “gradually moving forward”. We remind the Government of the lack of data it holds on the marine environment, highlighted only too well by its designation process for marine conservation zones, and urge it to step up its collaboration with industry in this area. (Paragraph 93)

Government response

- The MSCC has a dedicated industry-focused working group which has developed an action plan of work for inclusion in the MSCC strategic implementation plan.

37. In contrast to the Government, we do not think that having only one representative of industry sitting on the Marine Science Co-ordination Committee is sufficient. More direct engagement with the marine industry may encourage more rapid progress in data sharing. (Paragraph 94)

Government response

- A review of industry data collection in the UK has been commissioned by MSCC, ahead of a scoping project on data storage and access.

38. Although we acknowledge the importance of ensuring data is collected on a consistent and coherent basis, we note that both initiatives Mr Green refers to are about designing protocols rather than actually collecting data. (Paragraph 95)

Government response

- The Veterinary Medicines Directorate (VMD) has been actively collecting data on antimicrobials sold for use in animals since 1993. These data continue to be collected and published annually. These data have also been submitted to the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) project annually since 2008, which enables comparison to be made between European member states.
- The VMD is working with the livestock sectors in the UK to develop systems for collecting data on the use of antibiotics in pigs, poultry and cattle, which have been identified as priority species groups. This includes developing a data hub for all data on antibiotic sales and usage, into which industry initiatives can report. In addition, AHDB Pork is currently procuring a system for collection of data on antibiotic use in the pig sector.
- The VMD is actively involved in the ESVAC work to develop protocols for EU-wide collection of usage data, and has collected data from pig farms over the past year to test and shape the European protocols.
- Other VMD-funded projects have included the extraction and analysis of data on antibiotic usage in companion animals from university-led surveillance systems.
- The VMD also collects data on surveillance for AMR in bacteria. Since 1970 there has been regular monitoring in the UK of the patterns and prevalence of AMR in Salmonella recovered from animals and their environment, and since 1998 the results of antibiotic susceptibility testing of veterinary pathogens and some commensal organisms (including E. coli) have been collected.
- The UK contributes antimicrobial susceptibility data annually to the European Food Safety Authority (EFSA) for inclusion in the EU Summary Report on Antimicrobial Resistance.
- Taken together this gives us the most extensive surveillance of resistance in animal bacteria of any country. Our latest report on Veterinary Antimicrobial Resistance and Sales Surveillance (VARSS) was published in November 2014 and is available on the gov.uk website [<https://www.gov.uk/government/publications/veterinary-antimicrobial-resistance-and-sales-surveillance-2013>].
- The VMD continues to invest in research projects to investigate the transmission of resistance from animals and people; research into AMR is a Defra priority.

39. We find George Eustice's assertion particularly troubling. In the absence of an evidence base, taking comfort from "less evidence of resistance developing" in the veterinary profession verges on recklessness. (Paragraph 96)

Government response

- While clinical treatment failures attributable to antibiotic resistance are sparsely reported in animals Defra takes Antimicrobial Resistance (AMR) very seriously. Defra is fully committed to playing an integral role in achieving the UK 5 Year AMR Strategy. The strategy takes a one health approach, recognising that effective progress can only be achieved by close collaboration between human, animal, food and environmental agencies.
- Change is needed across all sectors, and will only result from a revision in general perception of the importance of antibiotics and increased understanding of the need to conserve and protect the medicines that we have come to rely on. The Veterinary Medicines Directorate has been working closely with vets and agriculture professionals to promote the importance of responsible use.

40. We are not convinced that the department has made any real progress since our original report on plugging its antimicrobial resistance evidence gap, nor do we feel that it has a firm grasp on the extent of the work it has to do and the time it will take. This may be an area of interest for our successor committee. (Paragraph 97)

Government response

- In December 2014, five months after the Committee's original report, the Government published its first annual progress report and implementation plan for the UK 5 year AMR Strategy. The report showed the extent of the work Defra has already undertaken so far, focusing on three of the key areas for action: Optimising Prescribing Practice, Increasing Public Awareness and Better Access to and Use of Surveillance Data. The report also laid out activities and timescales of what further action the department will take over the next four years to address the evidence gap.
- We acknowledge that although much work has taken place, and is planned, a focused and concerted effort by Government is required to keep momentum on this important issue.

41. We recommend the Government fill the evidence gap that has been identified and, early in the new Parliament, report to our successor Committee on how it has acted on the findings set out in the Minister's update to us. (Paragraph 98)

Government response

- Defra welcomes the Committee's continued interest in the issue of pharmaceuticals in the environment.
- In March, agreement was reached on the "watch list", which is a mechanism under the Water Framework Directive to gather information on the occurrence of emerging pollutants across the EU. A number of substances used as pharmaceuticals are on the list - 17-Alpha-ethinylestradiol (EE2), 17-Beta-estradiol (E2), Diclofenac, Erythromycin, Clarithromycin and Azithromycin. Samples will be gathered from across the UK as part of that work. Results of the first exercise should become available early in 2017.
- UK experts contributed to a workshop run by the European Commission to develop a strategic approach towards pollution of water by pharmaceutical substances in September 2014. The report of that meeting is yet to be published, although we understand the next steps are expected in early 2016.
- Officials have been supporting water companies in their development of a major programme investigating chemicals in effluents and surface waters at 600 wastewater treatment works over the period 2015-20. Part of that work will include examining 20 pharmaceuticals at 45 sites, to improve understanding of concentrations of high risk and/or high volume human medicines reaching the environment following wastewater treatment.
- The Committee may be interested to know that a scoping study, commissioned by Defra on socioeconomic and public health aspects of Pharmaceuticals in the environment was published in February 2015 at:
<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=19158&FromSearch=Y&Publisher=1&SearchText=wt1544&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description>

42. Innovation in the water industry and its effect on water security may be an area of interest for our successor committee. (Paragraph 99)

Government response

- Defra welcomes the Committee's ongoing interest.
- Defra has recently been a key partner in the launch of the UK Water Partnership - a new private-public partnership bringing together industry, policymakers and the research community to provide the key to unlocking a \$500bn global water market and tackling water security issues through a strategic approach to research, innovation and global clients. The UK Water Partnership has two primary goals:
 - To improve understanding, cooperation and coordination across the diverse water community, allowing the UK to respond more effectively to the challenges of global water security and the need for resilience in a changing environment.
 - To more effectively deliver and implement research outputs and innovation, so that the UK wins a greater share of the global water market.

Health

43. We were surprised that neither Minister appeared to appreciate the role of a science advisory council. It is precisely because the Department of Health has so many science advisory bodies that, under the Code of Practice for Scientific Advisory Committees, it would be good practice for it to have a science advisory council co-ordinating the work of the department's science advisory bodies and their advice to the Government. (Paragraph 101)

Government response

- The Department of Health receives a broad range of scientific advice from the Scientific Advisory Committees in the Department and agencies such as Medicines and Healthcare products Regulatory Agency and Public Health England. The need for scientific advice is informed by routine horizon scanning processes and the targeted work of the Department's Strategy Division. Combined with oversight from the CMO this provides a robust mechanism to coordinate the provision of scientific advice to Ministers and to the wider health and care system. The changing needs for advice are reflected in the dynamic make-up of the scientific advisory committees with committees being created and dissolved of as the need for advice on specific topics changes. The scientific advisory committees supporting the work of the Department of Health are governed by the CoPSAC guidance and several committees with statutory responsibility are subject to regular triennial reviews.
- In this respect whilst a Scientific Advisory Council may be appropriate for some Departments it would risk duplicating long-standing and successful arrangements at the Department of Health ,which has a track record of effectively using scientific evidence to inform policy making. The creation of this additional group in the Department of Health may simply increase the overall bureaucracy and create an unhelpful additional responsibility for the CMO.

44. We do not disagree that patient benefit should be at the heart of the healthcare system, but we are concerned that the Ministers do not appreciate the different functions of a CSA and CMO. Filling the posts of CSA and CMO with the same person deprives the Government of having two leading scientific voices in the department. (Paragraph 104)

45. We recommend that the department ensures that filling the roles of Chief Medical Officer and Chief Scientific Adviser with the same person does not limit the potential challenge of policy through rigorous scientific advice. We further recommend that the department review its structures for the provision of scientific advice to ensure that they are as effective as possible and reflect good practice. (Paragraph 105)

Government response

- The Chief Scientific Advisor and Chief Medical Officer, role are presently joined at the Department of Health. Professor Dame Sally Davies combines these roles ad personam, with the agreement of Sir Mark Walport. The Department does not anticipate that these roles will remain connected in perpetuity, but this arrangement works well with Dame Sally. We are very aware that early warning and early insight is essential to the CSA function.
- The Department is committed to ensuring that policy is based on the best available evidence of what works. Policy teams are open to scientific advice and challenge through the CSA and challenge on medical matters through the CMO.
- Dame Sally leads the research policy for the Department and holds responsibility for the research budget. In performing these roles she maintains strong links, both nationally and internationally with academia, the NHS, Business (particularly the life science sector), charities, professional societies, science media and patient groups.
- The Chief Medical Officer has the specific task of providing independent advice to the Secretary of State for Health and the Government on medical matters. Advice is based on the best available scientific evidence. The combination of the roles places Dame Sally in a particularly strong position to provide independent advice to Ministers as well as policy makers across the Department
- Dame Sally has been CSA since 2004 and the Chief Medical Officer from 2010.

46. Although we are not as convinced as the Minister that innovation is “right at the heart” of the NHS’ forward view, we are comforted that the Government recognises the opportunity offered by innovative technology in our healthcare system and now appears to be taking proactive steps to exploit that opportunity. We recommend that the Government update our successor committee on the progress of the Innovative Medicines and MedTech Review, the work of the Department of Health’s new directorate of innovation, technology and growth and the department’s involvement in the Small Business Research Initiative within six months of this Report and explain how it intends to implement the recommendations of that review. (Paragraph 110)

Government response

- The Accelerated Access Review of Innovative Medicines and Medical Technologies was announced in November 2014 by the Minister for Life Sciences. Its aim is to speed up access to innovative drugs, devices, diagnostics and digital products for NHS patients. In March, the Government published the Review’s terms of reference, and announced that it would be chaired by Sir Hugh Taylor, Chair of Guy’s and St Thomas’ NHS Foundation Trust, advised by Professor Sir John Bell, Regius Professor of Medicine at Oxford University, as the head of an independent expert external advisory group. The Review is also supported by the Wellcome Trust.
- The review commissioned two early pieces of work to map the current UK pathways for the development of medicines, devices and diagnostics and identify initial challenges for accelerating access as well as to map international best practice. This will contribute to the review’s evidence gathering and will be made publicly available on its website. The Accelerated Access Review is now engaging widely with stakeholders to understand the opportunities to speed up access for NHS patients to clinically and cost effective innovations. It will report to Government later this year.
- The Department of Health’s Innovation, Growth and Technology Directorate (IGT) was created to tackle major challenges facing health and care, and the wider economy. These include the public expectations on access to – and the personalisation of – services, the rapid pace of change in technology over the last five years and the increased efficiencies required over the next Parliament in the face of recent static hospital productivity. To address these challenges, IGT have outlined three core priorities:
 1. Promoting opportunities to catalyse economic growth and boost UK jobs through our health and care system.
 2. Leading a major transformation in the accessibility, effectiveness and efficiency of health and care services through technology and digital health
 3. Supporting the safe, efficient and effective access to and use of medicines in the NHS.

- Aiding the development and adoption of innovative medicines and devices into the NHS is a key priority for the Department of Health and involvement in the Small Business Research Initiative (SBRI) is a key tool in realising this achievement. The SBRI Healthcare scheme is delivered by NSHE via the Academic Health Science Network. Additionally the Department of Health is currently funding SBRI competitions to accelerate the development of technologies in the field of genomics and renal care. These are being delivered via Genomics England and the National Institute for Health Research Healthcare Technology Co-operative Devices for Dignity.

47. We have seen no evidence that the Department of Health has effective processes and advisory structures in place to ensure that the allocation of research funding is best aligned with the most valuable science. This is even more relevant given the “new landscape” referred to by the Minister and the Government’s Science and Innovation Strategy. We recommend that the department review how it currently allocates research funding, whether this is fit for future needs, and report to our successor committee on both the findings of this review and the changes to be made as a result. (Paragraph 113)

Government response

- The Department of Health funds research through the National Institute for Health Research (NIHR) and the Department’s Policy Research Programme (PRP) and the Government considers that robust and effective processes are in place for allocation of the Department’s research funding.
- The NIHR provides a health research system in which the NHS supports outstanding individuals working in world-class facilities, conducting leading-edge research focused on the needs of patients and the public. The NIHR distributes funds in a transparent and accountable way through open competition. Research applications are rigorously evaluated by independent peer review, funding panels and committees, to ensure that only the most outstanding proposals are funded. Key considerations are: the importance of the research question and the potential of the research to benefit patients and the public; the quality of the research; and its value for money. For example, the current NIHR Biomedical Research Centres were selected by open competition during 2011 by an expert international panel.
- For its inquiry on National Health Screening, the Committee received evidence on how the NIHR Health Technology Assessment programme ensures the scientific quality of its research².

² <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee/national-health-screening/written/6719.pdf>

- The Department's Policy Research Programme (PRP) commissions high quality, research-based evidence relevant to the full policy remit of the Department. The Committee received evidence from the Parliamentary Under Secretary of State for Public Health on the processes in place to ensure effective and appropriate allocation of the PRP's ring-fenced budget for prion disease associated research.³
- The Government is keen to ensure openness and promote engagement in science and innovation. In contribution to this, the NIHR is planning to hold a Parliamentary event later in 2015.

48. Based on our previous discussions with the Government on antimicrobial resistance, we are satisfied that the Government appreciates the scale of the challenges ahead. Although we are reassured that the Government recognises the importance of responsible prescribing of antimicrobial drugs, the Government has significant work to do to reverse the recent trend of increased antimicrobial prescribing. (Paragraph 117)

Government response

- The Government recognises that altering the trend in antimicrobial prescribing is a significant challenge. To address this challenge the Government is undertaking a range of behavioural interventions in order to bring about change in prescribing practice. These behavioural interventions are aimed at both clinicians and the public and are described in the first Annual Progress Report and Implementation Plan on the UK 5 Year Antimicrobial Resistance Strategy.
- The Progress Report, which was published in December 2014, explains that we have, for example, begun randomised control trials to test the impact of a feedback letter from the Chief Medical Officer to GPs on their antimicrobial prescribing rates compared to similar populations and national norms. Initial results are promising and further trials are required.
- Equally important is a Quality Premium introduced by NHS England from April this year, to improve antibiotic prescribing, and to reduce over use and inappropriate use of antibiotics within the healthcare sector.
- Further examples of work in progress include the initiative of the Chief Pharmaceutical Officer, who is working with Health Education England, Clinical Commissioning Groups, Royal College of General Practitioners and the Royal Pharmaceutical Society to ensure that GPs have good access to clinical pharmacy expertise in optimising the use of medicines.

³³ <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee/the-legacy-report-201015/written/17390.pdf>

- The Government is also looking at ways to support providers and commissioners to improve the use of local and national data and to work with local clinicians to embed best practice.

49. We welcome the Government's fledgling efforts to develop joined-up policy in this area but they do not yet appear to be translating into meaningful engagement with the pharmaceuticals industry. We recommend that the Office for Life Sciences immediately and directly engages with the pharmaceutical industry to ensure that industry's interests are effectively incorporated into Government policy on antimicrobial resistance. (Paragraph 120)

Government response

- The Government fully accepts the need for structured and purposeful engagement with the life science industries on antimicrobial resistance policy. To this end, the Department of Health, in conjunction with the Office for Life Sciences, has established a working group involving the biotechnology, pharmaceutical and diagnostics industries to address the key issues arising in the short to medium term to facilitate the development and adoption of new treatments, particularly antibiotics, and diagnostics.

50. We remind the Government that the development of new antimicrobial drugs is not sufficient in itself. Responsible husbandry of existing and future drugs is essential to ensure that the UK successfully manages the challenge of antimicrobial resistance. This may almost certainly mean a new pricing policy. (Paragraph 121)

Government response

- The Government accepts that the responsible husbandry of existing and future drugs is a key component of the strategy to address antimicrobial resistance. The independent Review on antimicrobial resistance led by Lord O'Neill is promoting an informed and far reaching international debate on the business models that will most successfully ensure the new antibiotics the world needs are developed to the point of use. Those models bear directly on pricing and reimbursement.
- Overall, the Government recognises that we need to tackle prescribing practices not only in the UK, but worldwide, which is why we worked to secure the World Health Organization resolution on agreeing a Global Action Plan in May 2015, and the support we have provided for similar resolutions by the Food and Agriculture

Organisation (FAO) of the UN and the World Organisation for Animal Health (OIE) to demonstrate the 'One Health' approach to tackling antimicrobial resistance.

51. Given the lack of explanation of the work that the Government tells us is currently being conducted, we can only assume that very little analysis of explanted medical implants is actually taking place. (Paragraph 124)

Government response

- The Government remains of the view that it would not be feasible to undertake the routine analysis of explanted joints. This is based on expert input from the UK's national joint registry.
- Thousands of implants a year are explanted, analysis is a costly exercise that requires significant expertise and there are only a small number of centres that can undertake such work.
- We recognise that explanted joints can provide valuable evidence but we consider that this is more appropriately undertaken on a targeted basis. An example of this is the work of the London Implant Retrieval Centre on analysis of explanted metal-on-metal hips.

52. The Government has made improvements to the regulation of medical implants without addressing one of the key risks associated with them, namely the lack of primary data relating to new and updated devices. This poses a public health risk. Our successor committee may wish to revisit this topic in light of the changing regulatory regime. (Paragraph 126)

Government response

- The Government wholeheartedly agrees with the Committee on the importance of transparency. The proposed revision to the regulation of medical devices will ensure that big steps are taken to make more information available.
- In particular, we are pleased with the proposal to require manufacturers of implants to produce and publish a summary of safety and performance information, which will be publicly available on the new central European database. This database will also allow information to be made public in relation to clinical trials undertaken with medical devices; the UK has pushed for greater transparency in this area and we are hopeful of a similar level of transparency to that agreed for the Clinical Trials Regulation.

- The UK is also hopeful that a new concept for medical devices – periodic safety update reporting – will be incorporated into the new legislation. This concept, which already exists for pharmaceuticals, would require implant manufacturers to provide yearly summaries of safety information and post-market studies about their device that would be available to the public.
- As the Committee is aware, the existing confidentiality provisions in EU legislation make it difficult to make substantial changes in advance of revisions to that legislation. Nonetheless, we are doing what we can within the existing framework.
- To that end, the Medicines and Healthcare products Regulatory Agency (MHRA) is supporting voluntary initiatives, such as the Beyond Compliance project, which is a collaboration between industry and clinicians. This has been established to increase the availability of short to mid-term clinical data and strengthen the evidence base for new implants in a more transparent manner.
- In addition, the MHRA is also developing a pilot scheme that will involve the voluntary release of safety data by manufacturers. We are working closely with industry and clinicians to develop this scheme which involves placing as much useful information as possible in the public domain following investigations into incidents with devices. This transparency scheme has now become an EU vigilance transparency task force chaired by the UK.

Government Office for Science

53. The Government Chief Scientific Adviser is directly involved in the appointment of departmental Chief Scientific Advisers. We strongly recommend that he ensures that those departments without CSAs fill the post as soon as practicable with suitably qualified independent individuals who will dedicate at least three days a week to the role, as recommended by the House of Lords Science and Technology Committee. We further recommend that the Government Chief Scientific Adviser works with Government departments to ensure their scientific advisory structures are fit for purpose. (Paragraph 130)

Government response

- The Government Chief Scientific Adviser is closely involved in the recruitment of all Whitehall departments' Chief Scientific Advisers, in the drafting of job descriptions and in sitting on the recruitment panel itself. The Government Office for Science works with departments where vacancies are due, to ensure the process for the appointment of a new CSA goes as smoothly as possible.
- The GCSA works closely with departments to ensure the time devoted to the role of CSA is appropriate to the needs of the department. We agree that the Government Chief Scientific Adviser should continue to work with departments to ensure their science advisory structures are fit for purpose.

54. Publishing the outputs of the Government's Horizon Scanning Programme Team at least a year after they have been completed is simply not good enough. We recommend the Government publish horizon scanning papers within a month of completion. (Paragraph 131)

Government response

- The Government has previously acknowledged that it may not have been as quick to publish Programme outputs as the Committee would have liked. The Programme Team is committed to publishing outputs as soon as is practicable, and to using different channels to communicate progress. This has included publishing a number of blogs during the year.

55. Putting aside the fact that we prefer the term “futures analysis” to horizon scanning, we are deeply concerned that the Government’s Horizon Scanning Programme team is not looking to the future at all and that, by the time its work is published, it may be outdated. Furthermore, its work and operations are not transparent and, although the Government tells us that it is consulting widely as part of its horizon scanning activities, we are disappointed that there is no external representation on the Horizon Scanning Oversight Group. We are also confused as to why the Government’s professed ‘horizon scanning’ takes place separately from the work of the Foresight Unit and see benefits from the two working in a more integrated way. We recommend that the Foresight Unit and the Horizon Scanning Programme Team form one central source of Government horizon scanning. Locating GO-Science in the Cabinet Office would facilitate this. (Paragraph 134)

Government response

- We can assure the Committee that the work of the Horizon Scanning Programme Team is sharply focused on the future. Its current activities include work to spot future disruptive technologies and global trends.
- The Government agrees that external expertise and challenge are critical to ensuring that the Programme is shaped by the latest research and leading edge thinking. Instead of creating a standing external membership, the Government Oversight of Scanning the Horizon group invites experts from inside and outside Government to its meetings to ensure they benefit from expertise directly relevant to the issues being discussed. The Horizon Scanning Programme team also maintains a strong focus on external engagement, for example through attending or hosting communities of interest, expert workshops and symposia.
- We can assure the Committee that the Horizon Scanning Programme team works closely with GO-Science’s Foresight team. Recent examples include Programme Team members facilitating workshops for Foresight colleagues, developing work on speculative futures and on planning future programmes of work.
- As the Government has explained before, it believes there are strong benefits to GO-Science being located in the Department for Business, Innovation and Skills, particularly the proximity to the science, universities, innovation, and industrial sector teams. It has not precluded the Government Office for Science from taking a leadership role in Government, for example on its data science agenda. This is further reinforced by the fact that Sir Mark Walport reports directly to the Cabinet Secretary and the two remain in regular contact.

56. We are encouraged that Sir Mark has been directly involved in this year's update of the national risk assessment and that a review of the assessment process is ongoing. We remind the Government of our recommendations regarding the input of scientific advice and evidence into the national risk assessment. We recommend that the Government sets out, in its response to this Report, its process for gathering and assessing the information that is involved in the national risk assessment as well as when and how a risk on the national risk assessment is triggered. (Paragraph 135)

Government response

- Risks to the UK are kept under constant review. The biennial National Risk Assessment process looks at all risk to the UK over a five year timescale and is used primarily to inform capability development, planning and prioritisation. More immediate civil disruptive challenges are monitored through the domestic horizon scanning activity. Both processes are led by the Civil Contingencies Secretariat (CCS) in the Cabinet Office.
- The National Risk Assessment (NRA) is a confidential assessment, conducted every two years, that draws on expertise from a wide range of departments and agencies from across Government. The National Risk Register (NRR) is the public version of this assessment.
- Although the NRA process is coordinated by the Cabinet Office, its production relies upon extensive expertise from within and outside Government, including scientific advice. The NRA aims to provide a well-rounded evidence base which can be used to inform decisions about building UK resilience.
- To ensure scientific evidence is given due consideration during the NRA process, the Cabinet Office and other departments across Whitehall draw upon knowledge and advice from:
 - Their departmental Scientific Advisory Groups;
 - Their Chief Scientific Advisors;
 - The Government Chief Scientific Advisor and the Government Office for Science;
 - The Behavioural Science Expert Group, which consists largely of academics and helps to assess the public outrage and anxiety of risks in the NRA;
 - The Natural Hazards Partnership, which consists of academics and scientists and considers the evidence base for natural risks; and,
 - The Chemical Biological Radiological or Nuclear (CBRN) Risk Group, which is a mixture of academics and Government scientists and experts that considers the evidence base for these types of risk in the NRA.

- New NRA risks are primarily identified by Government Departments as part of the biennial NRA process, however, new risks can also be proposed by local emergency planners from their local community risk assessment work or identified as a result of shorter term horizon scanning activity.
- To ensure the NRA is robust in its assessment, a number of review mechanisms are built into the NRA process. These include:
 - an interdepartmental Risk Assessment Steering Group which provides oversight and direction to the NRA process as a whole and an additional internal challenge function; and,
 - the National Security Council's Threats, Hazards, Resilience and Contingencies sub-committee (NSC(THRC)) and its official level group which signoff on the whole process.
- In addition, a review of the NRA process is underway this year. Its aim is to strengthen the assessment, ensure it continues to meet the needs of stakeholders, and reflects the best available evidence or advice from scientists, academics and policy makers. All groups and advisors mentioned above have been consulted during this review, as well as:
 - A range of cyber experts from both within and outside Government;
 - Local authorities and emergency services; and,
 - A range of other stakeholders who do not sit on any of the groups above, including leading academics, industry experts and international colleagues.
- In addition to the NRA, CCS also produces a quarterly assessment of near term, civil, disruptive challenges. This allows a more dynamic risk assessment to take account of unfolding events which may change the short-term likelihood or impact of a particular risk. Like the NRA, it also relies upon extensive expertise from within and outside Government, including scientific advice, dependant on the emerging risks. Separately Departments may raise emerging issues within their competence at any time.
- When emerging challenges or potential emergencies affecting the UK, or its interests overseas, are identified and are likely to affect a number of Government departments and necessitate a national co-ordinated response, the Cabinet Office Briefing Rooms (COBR) are activated. As part of this process, on-dynamic risk assessment is maintained in conjunction with relevant experts in departments and agencies into how the event might develop along with an assessment of likelihood, impact and readiness and how this changes over time in response to developments and mitigation measures.
- At this stage, the Scientific Advisory Group for Emergencies (SAGE) may be convened to ensure a wide range of scientific and technical expertise is drawn on to support decision making in COBR. In recent years, SAGE has been used extensively across a range of COBR activations to assess how an emergency might develop to

inform response options. In addition, SAGE can be used to peer review existing assessments and forecasting, consider if and where additional scientific input might improve the UK response and where appropriate can commission new research to inform response and longer term planning.

57. The Government has made progress in how scientific advice is incorporated into the national risk assessment and in SAGE guidance. We do, however, remind the Government of the need for SAGE to be as transparent as possible. We recommend that all of the output of SAGE meetings, minutes and other papers, be published as soon as possible after an emergency situation ends. We also recommend that the Government formally review the effectiveness of recent SAGEs and their compliance with the Government's Enhanced SAGE Guidance and publish the findings of this review. (Paragraph 139)

Government response

- We aim to publish the SAGE minutes as soon as possible after the emergency situation ends. We have published the SAGE minutes for 2013-2014 winter floods. We will be publishing the minutes for the Nepal Earthquake in the coming weeks. The Ebola minutes will be published when the WHO has declared the end of the outbreak.
- SAGE is reviewed internally following each constitution and these lessons are taken forward in any subsequent constitutions of SAGE.

58. We do not dispute that the public is aware of climate change; however, our inquiry focused on how climate science is communicated and the content of that communication, which can have a dramatic effect on the public's understanding and perception of the issue. Although we welcome DECC's use of social media, we do not feel that climate science can be effectively communicated in 140 characters. Organisations such as the Science Media Centre and media fellowships at the British Science Association may provide opportunities for Government collaboration with media professionals. (Paragraph 141)

Government response

- DECC are currently exploring opportunities to collaborate with key organisations and trusted messengers to improve the communication of climate science. Through the BIS Science and Society team, Government already works closely with both the BSA and Science Media Centre.

59. The Committee has also been concerned that in order to communicate climate change effectively the whole of Government should use one agreed definition. When this was put to Sir Mark Walport we were surprised at his answer "... if you look at any dictionary definition, you will mostly find three or four related ways of expressing it. There is no single biblical legislative definition, and all of these things need to be framed". (Paragraph 142)

Government response

- Government understand the need for a definition of climate change, and have published the following definition on GOV.UK – "A change in the statistical characteristics of the atmosphere (such as temperature, rainfall, pressure, or winds), oceans (such as heat content or sea level rise), cryosphere (such as extent of sea ice or length of glaciers) or land surface (such as changes in vegetation type) typically sustained over several decades or longer. A change in climate may be due to natural or anthropogenic (i.e. due to human activity) factors, or a combination of both."
- This is accompanied by the following statement – "Human-induced climate change is the current, past and future change in climate being driven by greenhouse gas emissions and other human activities, such as deforestation. When Government talks about 'climate change policy', or action to 'tackle climate change', we are talking about climate change mitigation and adaptation. Adaptation is taking steps to minimise exposure to damaging impacts of climate change, and to build resilience and reduce vulnerability to a changing climate. Mitigation is taking steps to minimise the scale of global temperature rise by reducing emissions of greenhouse gases and taking other steps, such as planting more forests."

60. The Government has made little progress in improving its communication of science. Science is neither lexicography nor scripture and for it to be communicated effectively there should be an agreed scientific definition of climate change. We are disappointed that nearly a year after our report on communicating climate science, DECC has not even agreed the terms of reference for its climate change communications group. We urge the next Government to systematically review how it can best communicate science to the public. This may be an area of interest for our successor committee. (Paragraph 143)

Government response

- We recognise that there is progress to be made in this area. As set out in the response to recommendation 5 (page 6), DECC plans to meet with relevant experts to consider how best to improve the communication of climate science, and will explore how we can work with key organisations, such as the Met Office and Royal Society, to further this goal. In addition to this the BIS Science and Society team already works closely with both the BSA and Science Media Centre

61. We were encouraged that the Government Chief Scientific Adviser recognises the value of funding public engagement. We recommend that the Government protect Sciencewise's funding and consider using Sciencewise as a channel through which scientific advice and evidence is communicated to the public, even where that evidence and advice is contrary to Government policy. (Paragraph 144)

Government response

- The Government is committed to supporting the UK science and research base and the public engagement with science work is an important part of this. The public are the ultimate customers of emerging technologies and, without public support, no technology or scientific idea can fulfil its potential.
- The Sciencewise deliberative dialogue programme is part of a wider Government public engagement programme and future funding for the programme will be considered as part of the Spending Review. It would be inappropriate to prejudge the Spending Review outcome.

Home Office

62. Lord Bates added that “we cannot detect that there has been any diminution of the overall forensic science capability in the country. If anything, it has probably been enhanced by plugging it into a broader network internationally”. The Government should, in its response to this Report, set out the evidence on which the Minister based this statement. (Paragraph 147)

Government response

- The Home Office Forensic Marketplace Management Team (FMMT) reviews, assesses and monitors the supply of forensic services by private sector suppliers. Their assessment is that the commercial forensic service providers delivering services under the National Forensic Framework - Next Generation (NFFNG) are, in general, doing so more cheaply and more rapidly whilst continuing to meet the required quality standards. The majority of Forensic Analysis Services are delivered by 7 companies through the NFFNG. These are a mixture of large multinational companies and SMEs, providing both niche and full service provision. This breadth of type of company enables the maximum access to appropriate expertise - be it in the UK or by wider collaboration with other overseas forensic departments within the multinationals.
- The FMMT coordinate the Forensic Marketplace Strategy group chaired by the National Policing Lead for Commercial Forensics. This group is developing an outline strategy of procurement vehicle options for Forensic Analysis Services. The key aims and objectives for this work were identified by the National Police Tactical Plan and include, amongst other priorities, the development of a sustainable marketplace. As discussed in our response to recommendation 65, we are considering a number of current and emerging issues as part of the development of the forensic strategy. These include identifying the size, structure and stability of the forensic supply chain, internal and external markets and maximising their efficiency.
- The national DNA and fingerprint databases continue to produce tens of thousands of matches each year linking suspects to crime scenes. In 2014 the DNA database was upgraded to use the ‘DNA-17’ profiling method which uses sixteen areas of DNA plus a gender marker compared to the previous ‘SGMPlus’ method which targeted ten areas plus the gender marker. The additional target areas increase the discriminating power of DNA matches and allow more complete DNA profiles to be obtained from crime scenes where DNA evidence has become degraded or is only present in small quantities.

63. Given the department's previous approach to using scientific advice and evidence, we are concerned that Ministers in the department are still not receiving the level of scientific advice and evidence on this matter that they require. We recommend that the Home Office reviews its governance structures for ensuring scientific advice and evidence is fully integrated into policymaking and ensures that scientific advice and evidence is effectively incorporated into Government policy. (Paragraph 148)

Government response

- As set out in our response to recommendation 7, the Government Office for Science continues to work with all Departments, including the Home Office, to ensure that the appropriate structures are in place.

64. We request that the Home Office's Chief Scientific Adviser writes to our successor committee to reassure it that he is aware of the scientific risks posed by the changing forensic science landscape and that he is actively engaged with the policy development in this matter. (Paragraph 149)

Government response

- Home Office Science, under the leadership of the Chief Scientific Adviser, plays an active role in forensic science. A considerable proportion of Home Office Science staff are located in the Centre for Applied Science and Technology (CAST), which undertakes significant work in forensic science, with examples including producing the Fingerprint Visualisation Manual, which provides world-leading guidance on the development of latent fingerprints, and developing specialist techniques for the recovery of evidence from vehicle electronic systems.
- The Director of Science, Engineering and Technology sits on the Forensic Policy Group, through which he provides scientific input to the direction of the forensic strategy. He is also a non-executive director of Forensic Archive Ltd, which is responsible for the management of the archived material previously held by the Forensic Science Service.
- The Chief Scientific Adviser plays an important role in external activities such as the encouragement of research by participating in conferences like the meeting recently organised by the Royal Society. He also addresses particular scientific issues within his own expertise; for example he conducted detailed analysis of potential issues around discordance in DNA-17, which formed the basis of a discussion with the Lord Chief Justice.

- The Chief Scientific Adviser trusts this answer is sufficient to meet any concerns the new committee could have.

65. The Home Office's lack of progress in producing a forensic science strategy is symptomatic of its failure to oversee responsibly the changing forensic science landscape. Forensic science is a key element of the criminal justice system: a Government forensic science strategy, covering issues such as research and development, is desperately needed to ensure that the criminal justice system is not adversely affected in the future. (Paragraph 154)

Government response

- The Forensic Strategy presents an opportunity to reshape the current landscape towards a modern forensic science provision, whilst also addressing a range of current and emerging challenges. We are committed to publishing a Forensic Strategy by the end of 2015.
- To meet this goal we are working to ensure that we have an evidence-based assessment of the issues and involving stakeholders from across Government and policing in the development of the strategy. The strategy will consider a wide range of issues including the forensic supply chain, marketplace and operating models, value and efficiency, legitimacy, governance and quality standards, knowledge and skills and forensic futures. The strategy will take account of research and development in this area as well as the requirements to ensure that evidence presented in court is of the highest quality and that all involved in the process have the required skills and knowledge.

66. It is imperative that forensic science receives ministerial oversight from the Ministry of Justice as well as the Home Office. Such ministerial oversight should, ideally, sit with one individual to ensure that the criminal justice system is not prejudiced by the changing forensic science landscape. We recommend that the Government, in its response to this report, explain where ministerial responsibility for forensic science lies within the Ministry for Justice and what steps are being taken to protect the integrity of forensic evidence submitted to the courts. (Paragraph 155)

Government response

- The Rt Hon Mike Penning MP, Minister for Policing, Crime, Criminal Justice and Victims, has responsibility for Forensic Science within the Home Office and responsibility for Criminal Justice across both the Home Office and Ministry of Justice.

- The Forensic Strategy, due to be published by the end of 2015, will consider the requirements of the courts and wider criminal justice system in this area.

67. We remind the Home Office of the Government's transparency aims and recommend that minutes of all meetings of the Forensic and Biometric Policy Group are published. (Paragraph 156)

Government response

- In response to the Second Report of the Science and Technology Committee Session 2013-14 the then Government said "The Forensic Policy Group within the Home Office is leading on the development of this strategy and delivery of this strategy will inevitably result in the Forensic Policy Group changing into a wider, more representative group. Once this change has taken place the strategy and minutes of the new group will be published."
- The Government's position is as described in this statement.

68. We are disappointed that the Government has not made any progress in improving the quality of police spending data since our last report. Unlike the Minister, we are not "quietly confident" about the health of the forensic science market; we believe that the Government's and police procurement processes need a complete overhaul. (Paragraph 161)

Government response

- The Forensic Marketplace Management Team (FMMT) collates detailed force spend data in relation to Forensic analysis services from a variety of sources including the Home Office Forensic Management Information Tool (FMIT). Over the past 3 years this has allowed detailed reviewing of the contractual arrangements between commercial FSPs and Police forces and Law Enforcement Agencies to include spend, submission volumes and forensic discipline usage data. This data enables an ongoing assessment of the commercial market. Data relating both to police internal spend and to digital forensic services is currently being collated as part of the wider strategic assessment of forensic services.
- A number of programmes are now well established to address the future direction and development of procurement processes of both the Government and the police. The Police owned and led Collaborative Law Enforcement Procurement (CLEP) Program, of which forensics forms a central category, is core to the Home Office commercial

strategy and has wide support from the National Police Chief Constables (NPCC) and Police & Crime Commissioners.

- As set out in our response to recommendation 65, we are committed to publishing the Forensic Strategy by the end of 2015. Current and emerging challenges concerning the supply chain, operating model, value and efficiency of the forensic market form a key part of this work.

69. The Government has made poor progress in ensuring that all police “in-house” forensic service providers are accredited to the same standards as private sector providers for all of the services that they provide. (Paragraph 164)

Government response

- The Forensic Science Regulator has, through her Codes of Practice and Conduct, set the standards which must be achieved and maintained by those providing forensic science and forensic pathology services to the Criminal Justice System for England and Wales. These include, in most areas, the requirements for accreditation to ensure that there is independent verification that the standards have been met and maintained. These requirements apply to all providers regardless of their status.
- It is for those commissioning work, including Chief Officers of Police, to ensure that the work is performed to the Regulator’s standards. Clearly a contractual relationship offers a simple method of imposing the requirement to maintain the standards on those under contract, but they should also be imposed on “in-house” provision.
- The Home Office is supporting the work of forces to achieve accreditation by the dates required. We are, subject to the following point, not aware of significant non-compliance with the Regulator’s requirements. Firearms classification and examination work is being undertaken, whether in-house or by providers, without the required accreditation. This is due to a number of factors including the range of examinations and the range of outputs from examinations and delivery models for firearms examination adopted by police forces both in relation to in-house and external provision. Ambiguity in the Forensic Science Regulator’s requirements published in 2011 has also contributed to this position, this was clarified in 2014.
- The Regulator is working with the police and providers to ensure the requirements for accreditation are appropriate, that work requiring accreditation is only performed in accredited facilities and that the other work is subject to an appropriate quality framework.

- The issue of enforcing compliance with the standards will be addressed as part of the work on statutory powers for the Regulator.

70. The Home Office's discussions to make sure the new powers are exactly what the new regulator wants are an example of the Home Office's unusual approach to policy making: private conversations undermine the value and credibility of the department's previous consultation exercise. We recommend that the Home Office publishes minutes of the meetings it holds with the new forensic science regulator regarding this issue. (Paragraph 165)

Government response

- The Regulator at that time was consulted about the nature and content of the consultation exercise on statutory basis and powers. This was entirely appropriate as the consultation related directly to his role. It is also reasonable to involve the new Regulator in the development of proposals following the consultation exercise. This is not unusual. The process of preparing a response to a consultation exercise routinely involves discussions with a range of interested bodies.
- A factual summary of the consultation responses is now available on gov.uk. We intend to set out our proposed way forward by the end of the year, following the consultation.

71. The Government's continued delay in giving the Forensic Science Regulator statutory powers is inexcusable. It is one of the Government's many failings in forensic science and one which they could have remedied by laying legislation before Parliament. (Paragraph 166)

Government response

- The responses to the consultation exercise on a statutory basis and powers for the Forensic Science Regulator have been analysed. The responses show a general support for a statutory basis and creation of significant powers for the Regulator. A summary of these responses is now available on gov.uk.
- The options for a statutory basis for the Regulator have been considered. Similarly, the range and nature of powers which may be granted to the Regulator, in relation to setting standards, enforcing standards, investigating quality related issues and protecting the Criminal Justice System have been considered. The Government

intends to develop a proposal on statutory basis and powers and set out the way forward by the end of the year.

72. We strongly recommend that our successor committee pursue the matter of forensic science with the next Government as we remain concerned that cases will emerge where injustices have occurred. (Paragraph 167)

Government response

- The Government agrees with the Committee that forensic science is of the utmost importance to the Criminal Justice system.
- The Government is committed to publishing a Forensic Strategy by the end of 2015 which will consider the requirements of the courts and wider criminal justice system.

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