 <h3>Life Sciences Strategy report shows UK has generated more than £1bn on industry and private sector investment within 12 months</h3>
 Prime Minister David Cameron will today announce plans to transform cancer treatment in England with new proposals to introduce high-tech DNA mapping for cancer patients and those with rare diseases, within the NHS. The UK will be the first country in the world to introduce the technology within a mainstream health system, with up to 100,000 patients over three to five years having their whole genome – their personal DNA code – sequenced. The genome profile will give doctors a new, advanced understanding of a patient's genetic make-up, condition and treatment needs, ensuring they have access to the right drugs and personalised care far quicker than ever before. It will also help to develop life-saving new drugs, treatments and scientific breakthroughs, which experts predict could significantly reduce the number of premature deaths from cancer within a generation. The Government has earmarked £100 million: <ul> to train a new generation of British genetic scientists to lead on the development of new drugs, treatments and cures, building the UK as the world leader in the field. And train the wider healthcare community in harnessing this technology to pump-prime DNA sequencing for cancer and rare inherited diseases; and
to build the NHS data infrastructure to ensure that this new technology leads to better care for patients.
   Speaking ahead of the announcement Mr Cameron said: <blockquote> "Britain has often led the world in scientific breakthroughs and medical innovations, from the first CT scan and test-tube baby through to decoding DNA. "It is crucial that we continue to push the boundaries and this new plan will mean we are the first country in the world to use DNA codes in the mainstream of the health service. "By unlocking the power of DNA data, the NHS will lead the global race for better tests, better drugs and above all better care. "We are turning an important scientific breakthrough into a potentially life-saving reality for NHS patients across the country. "If we get this right, we could transform how we diagnose and treat our most complex diseases not only here but across the world, while enabling our best scientists to discover the next wonder drug or breakthrough technology." </blockquote> Chief Medical Officer Professor Dame Sally Davies said: <blockquote> "Understanding and harnessing genetic information offers huge potential to target effective treatments and develop new treatments and cures. "Single gene testing is already available across the NHS ranging from diagnosing cancers to assessing patients' risk of suffering side effects from treatment. "At the moment, these tests focus on diseases caused by changes in a single gene. This funding opens up the possibility of being able to look at the three billion DNA pieces in each of us so we can get a greater understanding of the complex relationship between our genes and lifestyle." </blockquote> The UK has played a leading role in genetic science – it was Crick and Watson that discovered the double-helix structure of DNA, and British scientists helped to lead the global race to sequence the human genome. When the human genome was fully sequenced for the first time in 2000, the project had cost approximately £500 million. We will soon be able to sequence a human genome for less than £1,000, and the cost is likely fall further. As a result, experts believe a revolution in the way healthcare is delivered is approaching, with personalised medicines and individualised treatments becoming available for the first time. The sequencing of 100,000 patients' genomes in centres capable of sequencing DNA at speed in

the UK will further drive down the cost, delivering value for money in comparison to the current NHS tests for cancer and rare diseases that provide a more limited snapshot of information. The new plan comes as the Government publishes an update on the Life Sciences Strategy one year on from the launch. The report shows the UK has generated more than £1bn on industry and private sector investment into the sector within 12 months, which includes: <ul> £ 500 m from GSK to build its first new manufacturing plant in almost 40 years at Ulverston in Cumbria and invest more in its two sites at Montrose and Irvine in Scotland as a direct response to the introduction of the Patent Box; £ 25 m leveraged in from the private sector to bridge the £Valley of Death£ adding to a government commitment of £49m to 64 projects through the Biomedical Catalyst; and,
£ 294 m through the UK Research Partnership Investment Fund (UK RPIF) from businesses and charities. Real progress has been made working closely with companies across the sector to ensure the measures in the strategy are making a real difference to their work and their decisions to invest in and remain in the UK. This includes investing £1bn per annum through the National Institute for Health Research, which includes £500m in our translational research infrastructure in the NHS to boost networks between academia, industry and the NHS.

We have now set up the Life Science Investment Organisation, which will ensure the UK continues to be promoted as the partner of choice for overseas companies. However we cannot afford to be complacent. The pace of change in this fast moving sector creates a challenging environment. Going forward we have committed more than £100m of new money to help us stay ahead in the global race. This investment will: <ul> Build the necessary research capability to enable the UK to compete globally in a potential $100bn synthetic biology marketplace Develop a large scale facility for the manufacture of biologic medicines such as antibodies and vaccines which will fill a gap in biologic manufacturing capability and strengthen the UK£s case as the location of choice for internationally mobile life sciences companies; and Support a top-up fund to provide imaging and cell manufacture technologies and a clean room for the UK Regenerative Medicine Platform. Minister for Science and Universities David Willetts said: <blockquote> £Life sciences is one of the most truly international sectors £ so if we are to continue to be a world player and compete in the global race we must do everything we can to support it £In the past year, our initiatives have attracted more than £1 billion of private sector investment to the UK. We can see clear evidence the UK is succeeding in creating the right environment to attract global investment to our shores and continue to be world leader in life sciences. £I am announcing today that we are committing a further £100 million to support this sector out of the extra money for science announced by the chancellor in his Autumn Statement£ </blockquote> <h3>Notes to Editors</h3> 1. Genome sequencing is entirely voluntary. Patients will be able to opt out of having their genome sequenced without affecting their NHS care. 2. Whole genome sequence data will be completely anonymised apart from when it is used for an individuals own care. 3. A number of ways to store this data will be investigated. The privacy and confidentiality of NHS patients will be paramount in this decision. 4. The life sciences industry is generally understood to comprise pharmaceutical, medical technology and medical biotechnology companies, and industrial biotechnology companies (industrial biotechnology is not covered by this Strategy). The wider life sciences ecosystem encompasses the broad spectrum of life science partners, including, researchers, clinicians, investors and patients. 5. Despite enormous pressure on public spending, the £4.6bn per annum funding for science and research programmes has been

protected in cash terms and ring fenced against future pressures during the four years of the spending review period. Almost £610 million of capital has been invested in science this year.</p>