Title	Date	Description
How many people have musculoskeletal conditions?	31/08/2017	The Musculoskeletal Calculator (MSK Calculator) is a prevalence modelling tool for musculoskeletal conditions. Data on the burden of musculoskeletal conditions is lacking and for the first time these prevalence model provides estimates of the burden of musculoskeletal conditions to local areas. This information is particularly important to ensure that local decision makers take musculoskeletal conditions into account sufficiently when planning their services.
Whooping cough vaccination during pregnancy	31/08/2017	This research examined the safety of the whooping cough (pertussis) vaccination in pregnant women, using GP data from around 12.5 million women. In 2012, the UK targeted a vaccination programme at pregnant women to tackle an increasing rate of whooping cough, a very dangerous condition for newborns. This study found that the vaccine didn't increase the risk of stillbirth.
Does a smoking ban affect pregnancy outcomes?	31/08/2017	This research demonstrated a fall in premature births and low weight new-borns following the Scottish ban on smoking in enclosed public places in 2006. This was an important demonstration of the benefits of a smoking ban and provided strong evidence for other countries considering a similar policy.
Living with Multiple Sclerosis	31/08/2017	Multiple sclerosis (MS) is an autoimmune disease affecting the central nervous system. Symptoms include problems with mobility, sight, incontinence, and physical exhaustion. Over 100,000 people in the UK have MS, and it is different for everyone. The MS Register links data between a number of sources including NHS records for people with MS with self-reported health information, giving a much richer picture of someone's overall health. Researchers can then use this detailed data to gain new insights into how people live with MS in the UK. For example, the Register has identified high levels of anxiety and depression amongst people with MS, allowing treatment to be directed to this neglected issue.
A tragic case of data mismanagement	31/08/2017	In April 2015, 13-year-old Tamara Mills had a fatal asthma attack. When the coroner investigated how such a tragic event could have been allowed to happen, he found failings in the way her health records had been linked. In particular no one had flagged that, in the four years leading up to her death, she was seen by medical professionals 47 times in different parts of the NHS. Linking these records could have allowed her doctors to treat her differently and perhaps prevent her death.
Tracking Parkinson's	31/08/2017	This is the largest ever study using the data of people with Parkinson's and aims to help understand the biological changes that happen when someone has this complicated condition. Researchers are hoping to find small changes in the body that could either help diagnose Parkinson's or identify new ways to treat the disease.
Prescribing statins to men without a history of heart attacks	31/08/2017	The West of Scotland Coronary Prevention Study (WOSCOPS) looked at what happens when you prescribe statins to men with high cholesterol but without a history of heart attacks. As well as

		demonstrating a reduction in deaths, a substantial reduction in heart attacks and other reasons for being admitted to hospital for heart disease, long term follow up over fifteen years showed that this intervention was cost saving.
Treating rare genetic diseases	31/08/2017	DECIPHER is an international project that links genetic and phenotypic data from people with rare genetic diseases. It is a valuable resource for clinicians managing patients with rare genetic conditions, and for research teams investigating their underlying genetic causes.
Tackling preventable amputations	31/08/2017	More than 100 people have a foot or leg amputated each week as a result of diabetes, but four out of five of these amputations are preventable. Diabetes UK is a partner to the National Diabetes Audit. It links Hospital Episode Statistics (HES) to primary care data to identify areas of the country where the problem is particularly severe and to work with those areas to improve awareness and ensure more targeted treatment to reduce unnecessary amputations.
Better funding for GP practices in socially deprived areas	31/08/2017	The funding a GP practice receives is based on a formula that doesn't account for the level of social deprivation in the area. Three GPs based in the London borough of Tower Hamlets used data to investigate how social deprivation affects the demand for their services. They were able to demonstrate that high levels of social deprivation, like those seen in Tower Hamlets, increased the burden on GP services. The findings suggest that the borough of Tower Hamlets was being significantly underfunded by the current formula.
The impact of air pollution on health	31/08/2017	In the UK alone, air pollution contributes to tens of thousands of early deaths every year. The European Study of Cohorts for Air Pollution Effects (ESCAPE) aims to improve the understanding of how air pollution affects health by combining data from across Europe.
Identifying public health risks	31/08/2017	Real time syndromic surveillance is the monitoring and analysis of health data in the hope of identifying a potential public health risk, such as an epidemic. Public Health England carries out this analysis and keeps public health officials up to date so that they can respond to any emerging crises.
Working out who is at risk of cardiovascular disease	31/08/2017	Every year in the UK, over 40,000 people under the age of 75 die from cardiovascular disease. There are many things people can do to avoid developing the disease, but it's helpful for them to know if they are at high risk. QRISK®2 is a tool based on analysis patient data, that allows people (who do not have an existing diagnosis of coronary heart disease (CHD) or stroke) to work out the level of cardiovascular risk that they are facing.
Assessing a new treatment for severe asthma	31/08/2017	One in twenty people with asthma has severe asthma, where symptoms do not improve even when the usual medications are used correctly. Bronchial thermoplasty is a new treatment for this condition. Safety data for this procedure comes mostly from clinical trials, but this research used data from routine UK clinical practice to evaluate its safety in the real world.

Understanding the impacts of genes, lifestyle and environment	31/08/2017	UK Biobank is a store of information about the health of 500,000 people. It is an international resource for researchers studying a range of diseases, including cancer, heart disease and dementia. By looking at the data, researchers hope to gain new insights into what causes diseases to develop, how they can be prevented and how they should be treated.
Making sure all young people get the best cancer care	31/08/2017	Cancer treatment for children and young adults can be delivered at a local hospital or at a principal treatment centre. This project investigated whether or not there was a difference in the outcome of childhood cancers depending on where someone received their treatment. The analysis demonstrated that where the treatment is given does not change a child's chances of surviving cancer. Apart from ensuring that people get the best care regardless of location, this also allows healthcare professionals to reassure young adults, and the parents of young children, with cancer that they will get the best treatment wherever they receive it.
Involving patients in motor neurone disease research	31/08/2017	PatientsLikeMe is a website where people can monitor their health and contribute towards research by sharing information on their wellbeing and symptoms. This work looked at data from people with motor neurone disease (MND) who were taking lithium carbonate to treat their condition. Despite its discussion in online forums, they found that lithium carbonate did not improve the symptoms of MND. This new approach could complement traditional randomised clinical trials.
Improving pharmacist access to healthcare data	31/08/2017	This project trialled giving pharmacists access to Summary Care Records (SCRs) so that they could be more informed when advising people. Not only did this scheme reduce GP referrals, it also brought down waiting times and prescribing errors. It has subsequently been rolled out across England.
Using social media to better understand rheumatoid arthritis	31/08/2017	This research uses data from an online support group to gain insights into the lives of people with rheumatoid arthritis, in particular the side effects they can experience from their medication. This could help to better understand how and when these drugs can be safely prescribed and what matters most to people with arthritis.
Understanding the true threat of bacterial infection	31/08/2017	Hospital data shows that the numbers of antibiotic resistant infections are rising, but gaps in this information make it difficult to know the scale of the problem.
Studying the health of doctors to prove the dangers of smoking	31/08/2017	Running since 1951, this study examined the smoking habits and health of British doctors. Since then they have been followed up multiple times and helped to reveal the indisputable link between smoking, lung cancer and heart disease.
Using GP records to learn more about the health of carers	31/08/2017	This study used GP records to examine the health of people living with terminally ill relatives. It suggested that GPs significantly under-report the number of people who act as carers.

		Underestimating these numbers makes it more difficult to ensure that carers get the support they need from health services and beyond.
A better understanding of mental illness	31/08/2017	The Clinical Record Interactive Search (CRIS) allows approved researchers to access de-personalised records from a large London mental health trust. This rich dataset supports a wide range of research into mental illness and, in the future, will support improvements in the understanding and treatment of these conditions.
Can diabetes drugs cause bladder cancer?	31/08/2017	Patient data is critical to establishing the risks and benefits of treatments. In this case, there is some evidence that a drug prescribed for diabetes, pioglitazone, leads to an increased risk of bladder cancer. At the moment, the nature of this link is unclear, so further research is critical for patients and clinicians alike.
Improving the treatment of bacterial meningitis in young babies	31/08/2017	This research showed that the number of babies under three months old contracting bacterial meningitis has not fallen for twenty-five years, indicating the urgent need for better prevention of a potentially fatal disease.
Investigating self-harm in young people	31/08/2017	This research looked at what young people report about self-harm in surveys compared with their medical records. It found that adolescents tend to under report self-harm. This supports doctors and the NHS to gain a better understanding of self-harm, informing treatment and planning decisions.
Tackling preventable asthma deaths	31/08/2017	Alerted to its above average rates of asthma admissions, the George Eliot Hospital Trust in Nuneaton analysed hospital records to identify children at a high risk of asthma attacks and targeted treatment directly to them. Focused treatment of this kind, used nationwide, could reduce the number of unnecessary deaths from asthma.
Improving treatment of teenage anxiety and depression	31/08/2017	By using large scale data from GPs in Wales, researchers established that prescribing guidelines for teenagers with mental health problems were not always being followed. These findings have been used as the basis for ongoing work to provide better support for GPs to deliver the best treatment for teenagers.
Demonstrating the safety of an anti-obesity medication	31/08/2017	Orlistat is a commonly prescribed anti-obesity drug, but there have been concerns that it might damage the liver. This study, using GP and hospital data, showed that although liver injury is more likely when Orlistat is prescribed, this is probably the result of someone's declining health triggering the decision to take the drug, rather than the drug itself.
Demonstrating the safety of a treatment for heart failure	31/08/2017	This research used GP data to check whether or not a drug commonly prescribed for heart failure and high blood pressure might be linked to an increased risk of cancer. It concluded that such a link was unlikely, providing important reassurance for people taking this drug and the doctors who prescribe it.

Treating mental health and substance abuse	31/08/2017	By analysing GP data in South Wales, researchers were able to provide more accurate estimates of the number of people with both mental health and substance abuse problems. This information helps the local Health Board to better support this group of people.
Analysing local variation in stroke prevention	31/08/2017	Atrial fibrillation (AF) increases your risk of stroke fivefold. AF is a manageable condition - the main treatment to reduce your stroke risk is blood thinning medication (anticoagulants). However, the condition is often not diagnosed and guidelines of how it should be managed are not always followed. By comparing local data on atrial fibrillation care, this work draws attention to regional variation in treatment and can support local areas to prevent more strokes.
Improving management of chronic kidney disease	31/08/2017	ASSIST-CKD is a method of monitoring the blood test results of people with chronic kidney disease and alerting GPs if their condition worsens. This means that people can be referred promptly and given the right treatment at the right time.
Understanding the needs of people with cancer	31/08/2017	The Electronic Holistic Needs Assessment allows people to identify and record any concerns that they may have following a cancer diagnosis or treatment, whether these are physical, practical, emotional, family, or spiritual. These can then be used by their health or care team, to help co-create their holistic care and support plan.
Follow up for people discharged from hospital after a heart attack	31/08/2017	By linking three separate sets of data, this research showed that it is common for people to stop taking a recommended anti-clotting drug once they are discharged from hospital after a heart attack. There is also evidence that stopping taking the drug is associated with an increased rate of death, although this research did not prove a causal link between the two.
Screening for bowel cancer	01/09/2017	Bowel cancer is one of the most common cancers in the UK. Bowel scope screening is currently used in England to detect and prevent bowel cancer. The use of this potentially life-saving test was based on research that used patient data to recruit to a clinical trial and to follow up on what happened to the people who took part in the trial.
Is there a link between asthma drugs and heart attacks?	01/09/2017	Previous research suggested a potential link between drugs commonly prescribed for asthma and heart attacks. This much larger study examined over half a million records and found that there is unlikely to be a link, reassuring patients and GPs that this is a safe treatment for asthma.
Screening for ovarian cancer	01/09/2017	The UK Collaborative Trial of Ovarian Cancer Screening (UKCTOCS) is a randomised controlled trial of 202,638 women to investigate whether screening for ovarian cancer can save lives. While more women were picked up with earlier stage ovarian cancer with blood based multimodal screening, the trial at this point could not demonstrate that screening saves lives. Further follow up of the women is now underway.
Comparing cancer survival rates worldwide	01/09/2017	The International Cancer Benchmarking Partnership (ICBP) is a unique global programme that identifies how and why cancer survival rates vary between countries. Understanding why some

		countries have higher survival helps to identify how we can improve health services in the UK to achieve the best outcomes for patients.
Planning services for people living with and beyond cancer	01/09/2017	When someone is diagnosed with cancer, their life can take many different directions. Developed by Macmillan Cancer Support and partners, Routes from Diagnosis is a project which uses patient data to look at what happens to someone after receiving a cancer diagnosis. This can help improve NHS services, promoting tailored treatment for cancer patients and a more efficient use of resources.
How does lifestyle affect health?	01/09/2017	The European Prospective Investigation into Cancer and Nutrition (EPIC) is the largest ever in depth study of diet and health. By collecting detailed information from over half a million people, this study is helping to shed light on the complex relationship between a person's lifestyle and their health.
Analysing the link between radiotherapy for Hodgkin Lymphoma and breast cancer	01/09/2017	Women treated at a young age with a particular type of radiotherapy are at increased risk of getting breast cancer in later life. This research looked into other factors which may affect these women's level of risk and found that being treated close to the time they had their first period may further increase the risk. This knowledge can be used to improve follow up and screening.
Are flu vaccines effective?	04/09/2017	Each year, flu vaccinations are offered in the UK. It is important to establish whether this ongoing programme is reducing the spread of flu and whether it is cost effective. This study used GP data to investigate the effectiveness of the flu vaccines in 2008/9 and 2009/10.
Getting people with COPD more involved in their own healthcare	04/09/2017	The COPD Care Checklist is a way of informing people with COPD about their treatment and encouraging them to become more involved in managing their condition. By promoting better interventions the checklist aims to stop a person's COPD from getting worse and avoid unnecessary and expensive hospital admissions.
Investigating the national uptake of emergency operations for heart attack	04/09/2017	This research used patient data to investigate the use of an emergency operation for heart attacks. The findings that uptake was not uniform across England can be used to inform improved care across the NHS to ensure that everyone receives the same quality of care.
Studying the health of a million women	04/09/2017	Over a million women have volunteered to share details about their health and lifestyle as part of this study. This wealth of data allows researchers to examine long term trends and causes of disease, improving the understanding of how conditions can be prevented and treated.
Improving early cancer diagnosis for Black African women	06/09/2017	This research using patient data revealed that Black African women in England are nearly twice as likely to be diagnosed with late stage breast cancer as white women in England. The next step for researchers is to find out why there is this difference and improve earlier diagnosis rates in this group.

Using genetics for healthcare and research	06/09/2017	The 100,000 Genomes Project is linking the genomes of people with rare diseases and cancer to their health records in order to gain new insights into the causes, diagnoses and treatments of disease. This work has the potential to improve treatments for current patients as well as lead to breakthroughs in the future.
Updating the understanding of the risks of diabetes	06/09/2017	Researchers using GP data have improved our understanding of the link between diabetes and heart disease. This information can be used to guide healthcare planning decisions as well as supporting doctors and patients to have a better understanding of individual risk.
Demonstrating the safety of oral contraceptives	06/09/2017	Millions of women across the UK use oral contraceptives. This study drew on data gathered over a 29 year period and demonstrated that women who have used the pill do not have an increased risk of death.
Extending the UK flu vaccination programme	20/10/2017	In 2012, the UK expanded its flu vaccination programme to include 2-17 year olds. This decision was partly based on the findings of research using routine flu surveillance data, which demonstrated the important role that children play in the spreading of flu.
Disproving the link between the MMR vaccine and autism	10/01/2018	A study looking at GP records in the Clinical Practice Research Datalink has helped to conclusively show that there is no evidence of a link between the MMR (measles, mumps and rubella) vaccination and autism.
Assessing the benefits of cholesterol lowering drugs	26/01/2018	The Heart Protection Study recruited over 20,000 people with existing heart problems and demonstrated that their risk of dying was significantly reduced if they took statins. This provided evidence to support the prescription of statins to people at high risk of cardiovascular disease.
Preventing suicides	21/06/2018	By linking three decades of hospital and mortality records in Scotland, this research discovered that a quarter of people who died by suicide had been admitted to hospital in the three months before they took their lives. This new insight into suicide demonstrates the importance and potential of involving hospitals in suicide prevention.
Comparing cancer survival	21/06/2018	This research compares cancer survival trends between many countries world-wide. The goal is to quantify international differences in survival and to establish which governments could do more to increase the chances of long-term survival for people diagnosed with cancer.
Understanding hip fractures	21/06/2018	By gathering nationwide data on the treatment of fractured hips, the National Hip Fracture Database allows hospitals to assess their own performance and plan for how they can deliver better outcomes for people more efficiently. This leads to a better experience for people with fractures and can save the NHS money.
Monitoring the long term safety of cystic fibrosis drugs	25/06/2018	Over 99% of people with cystic fibrosis in the UK consent to their data being included in the UK Cystic Fibrosis Registry. This invaluable source of data is then used for their benefit, to promote research and evaluate the safety of current treatments.

Mobile health approaches for asthma	26/06/2018	Using smart devices to monitor and manage long term conditions is becoming increasingly popular and is often known as mobile health. However, there is still limited evidence on the effectiveness of such approaches. A 'smart inhaler' is being developed by myAirCoach to help people monitor their asthma and evaluate how well this new technology works.
Early diagnosis of dementia	26/06/2018	By gathering detailed health information from 500 individuals, researchers hope to gain unique insights in to the earliest stages of dementia. Work like this is vital to discover treatments for this condition.
Learning more about blood cancer	26/06/2018	By gathering detailed information about people with blood cancer in Yorkshire, researchers and doctors are gaining a better understanding of how this disease can be treated and diagnosed.
Targeting back pain treatment to those most in need	26/06/2018	The STarT Back screening tool uses patient data to help doctors work out the chances of someone with back pain going on to develop a long term disability. By supporting doctors to find those most at risk, treatment can be targeted to where it is most needed, benefitting those with back pain and saving the NHS money.
Improving newborn screening	07/08/2018	A baby with congenital hypothyroidism (CH) will experience serious learning problems later on in life. Data about CH diagnoses showed laboratories needed to use the same test when screening babies. Data about CH treatment also showed some children no longer need treatment by three years old. Complications from CH are now rare because most babies are diagnosed early and can start lifelong treatment.
Monitoring joint replacement surgery	08/08/2018	Thousands of people have joint replacement surgery every year and the National Joint Registry gathers together data on the outcomes of these surgeries. This allows surgeons and hospitals to monitor the success of their operations and ensure that the devices used are safe and effective. Individuals can also use the Registry to inform themselves better about the surgery which they are having.
Evaluating bowel cancer care in Yorkshire	12/09/2018	Bowel cancer survival rates in Yorkshire are currently below the UK average and this research will use patient data to understand why. Once the reasons for these poorer outcomes have been identified, the research team wants to work with hospitals to improve practice and ensure higher bowel cancer survival rates in Yorkshire.
Supporting research into rare kidney disease	26/10/2018	Rare kidney diseases can devastate people's lives, but because the individual diseases are uncommon, conducting research to improve treatment options is difficult. The National Registry of Rare Kidney Diseases (RaDaR) gathers together information from people with certain rare kidney diseases to make it easier to research these conditions.
Does pain get worse in bad weather?	16/01/2019	'Cloudy with a chance of pain' is a study looking at whether there is a link between the weather and the symptoms of pain. Participants with arthritis or chronic pain track their symptoms using a smart

		phone application or 'app'. At the same time, the phone is recording the local weather. Using data from a very large number of people, it should be possible to uncover whether there is a relationship between the weather and pain.
Understanding the needs of children with vision impairment or blindness	07/03/2019	Around 2 in every 1,000 children in the UK have severe vision impairment in both eyes. Studies on national data showed for the first time that risk for children depends on their ethnicity, birthweight, levels of deprivation and other early life factors. The findings have changed the way the NHS screens for childhood visual impairments and became the international standard for describing the burden of childhood vision impairment across the world.
Helping people with psychosis	31/05/2019	Psychosis is a complex mental health problem that can affect people in many different ways. The smartphone application (app) ClinTouch allows people affected by psychosis to record their symptoms. This helps them to manage their condition themselves, but also provides an early warning system to their doctors if there are sudden changes in their symptoms or behaviour.
Improving treatments for COPD	31/05/2019	The Salford Lung Study uses a new approach to clinical trials, monitoring patients in real-time to find out what happens when a new treatment for Chronic Obstructive Pulmonary Disease (COPD) is used in the 'real world'. By linking together electronic healthcare records from a number of sources across the NHS, it was possible to track over 2,800 patients over a 12 month period to assess the effectiveness of the treatment in an everyday setting, rather than in a more artificial, clinical trial environment.
Investigating trends in diabetes	31/05/2019	This large-scale population study, Southall and Brent Revisited (SABRE), is looking into the links between diabetes and cardiovascular disease, in particular why diabetes is more common in certain ethnic groups. By understanding the causes and trends of these conditions, they hope to prevent and treat these conditions more effectively in the future.
Using techniques from astronomy to diagnose dementia	31/05/2019	The Astrodem study uses techniques developed for studying galaxies to analyse GP data, looking for the early warning signs of dementia. It is hoped that this innovative approach will lead to better tools to help GPs diagnose dementia earlier and offer better support to their patients.
Improving dialysis treatment in the UK	31/05/2019	This study showed that if people have a two day break in their dialysis treatment, they are much more likely to be admitted into hospital or die than if they have no break in the treatment. This was achieved by linking the UK Renal Registry with Hospital Episode Statistics. It has significant implications for how renal services are delivered in the future.
Finding treatments for Covid-19	29/01/2021	The Randomised Evaluation of COVid-19 thERapY (RECOVERY) Trial was set up to identify effective treatments that improve outcomes for people in hospital with suspected or confirmed Covid-19.