Changing medicine breakthroughs? Jenner trained by leading surgeon who taught students to observe carefully and carry out their own experiments instead of relying on knowledge in books – Jenner followed these methods. The flushing toilet important late 19th C invention – flushing system sent millions down to sewers. At first only for rich but important change. 1853, government also stopped tax on soap, so many more people could afford it. Simpson deliberately tested chemicals to see effectiveness as anaesthetics, discovering chloroform with his friends in 1847. 1802 and 1807 Parliament gave Jenner £30,000 to develop work on vaccination. Government later made vaccinations compulsory. 1798 – Jenner published discovery, spreading details of experiments worldwide. Details of new discoveries published in scientific journals, so scientists could learn from each other. E.g. Lister used work of Pasteur, Koch and others in developing ideas about using antisepsis in surgery. Huge engineering projects to build sewers and water supply systems, building hospitals, taking control of clean-up conditions in the industrial towns. The 1848 public health Act was a start, though a small one, permitted local councils to collect taxes to pay for cleaning water supplies and sewerage, but it was the 1875 that made such improvements compulsory. At the same time improvements in technology led to the building of much safer and more effective sewerage and water systems such as Bazalgette’s system in London. A critical change had taken place in that governments were now beginning to become involved in promoting health and preventing disease, but this development remained a slow process.

Preventing disease and illness in industrial England The first breakthrough came in the battle against smallpox. Isolation was useful but it Edward Jenner’s development of vaccination was the first major triumph over an infectious disease, even if it took decades for governments to enforce the use of vaccination. Other vaccines when not developed until Pasteur had published his germ theory and even then, it was several decades before effective vaccines for individual diseases were widely available. The Great Stink of 1858 of the Thames was a landmark years where government made new laws about public health. 1875 especially as it forced changes whereas 1848 merely suggested changes! Simpsons discovery of chloroform did not 'happen out of the blue'. Doctors were aware of other chemicals such as ether as scientist learnt about impact of chemicals on human body.

Enquiry: Why were there so many medical breakthroughs in the nineteenth century? Remember not all factors are as important as others, some not at all! The Factors: Institution: Government Communication: Individuals – important to identify the qualities of the individual such as determination, observation and insight. Attitudes clearly linked to individuals work as they were willing to ask questions, challenge old ideas, experiment and collect evidence! Their attitude was that there was great deal to discover. Each new discovery spurred on others. The fact that the 19th C was an age of dramatic change, progress was a critical factor. Science and Technology Chance – always seeking improvement Institution: The church War Teamwork

Practice questions
1. Explain one way in which publics reactions to epidemics of disease novel in the seventeenth and eighteenth centuries. 
2. Explain one way in which publics reactions to the epidemics of disease were different in the seventeenth and eighteenth centuries.
3. Explain one way in which ideas about the causes of disease were different in the seventeenth and nineteenth centuries. 
4. Explain one way in which ideas about the causes of disease were different in the seventeenth and nineteenth centuries.
5. Explain why there was a dramatic change in the treatment of illness and disease in the 19th century.
6. Explain why there was an explosion of interest and change in the treatment of illness and disease in the 19th century.
7. Explain how rapid change in medicine and science were linked to a new political era.
8. Explain how rapid change in medicine and science were linked to a new political era.
9. Explain why there was a dramatic change in the treatment of illness and disease in the 19th century.
10. Explain why there was a dramatic change in the treatment of illness and disease in the 19th century.

Method of treatments in Industrial England

Changing ideas of causes

The 19th C witnessed a major breakthrough in the prevention of disease during the period 1770-1800. However did this put an end to all earlier ideas. Belief that bad air was to blame continued, which is not surprising given the conditions in many industrial towns. In addition, Pasteur’s theory was a very general one until scientists began to identify the individual bacteria which cause particular diseases. So, while this was one of the two most important breakthroughs in ideas about what causes disease and illness it did not revolutionise medicine immediately. Scientists and doctors where the first to adopt the idea of microorganisms, but it took time for most people to understand it. This is shown in the example of a little girl who was treated by a local wise woman who tried to charms her back to health – in 1892, 30 years after Pasteur’s theory was published.

It is also important to remember that bacteria do not cause all illnesses. Many have other causes which we find out about in medicine in modern Britain.

Preventing disease in the 19th century

Jenner’s breakthrough came with Louis Pasteur’s germ theory which he published in 1863. His later experiments proved that bacteria (also known as microbes or germs) cause disease. However, this did not put an end to all earlier ideas. Belief that bad air was to blame continued, which is not surprising given the conditions in many industrial towns. In addition, Pasteur’s theory was a very general one until scientists began to identify the individual bacteria which cause particular diseases. So, while this was one of the two most important breakthroughs in ideas about what causes disease and illness it did not revolutionise medicine immediately. Scientists and doctors where the first to adopt the idea of microorganisms, but it took time for most people to understand it. This is shown in the example of a little girl who was treated by a local wise woman who tried to charms her back to health – in 1892, 30 years after Pasteur’s theory was published.

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