The page of change since 1900

The greatest breakthroughs before 1900 had been vital stepping stones to better health and longer lives but medicine had not been revolutionised overnight. Here are some key points about medicine in 1900 which shows that change had been slow despite those breakthroughs:

- By 1900 life expectancy was beginning to increase but was still below 50 years of age.
- In 1899 163 out of every 1000 babies died before their first birthday – that’s 3 out of every 20 births
- The majority of families did not see a doctor because they could not afford to pay the fee
- Vaccines had been developed against some infectious diseases. However, there was nothing to stop the spread of other diseases and many people did not have the vaccines that did exist.

From 1900 onwards there remained steady rather than rapid at first, as shown in this description by Kathleen Davys. She was one of a Birmingham family of 13 children growing up in the mid 1920s and 1930s.

"Headaches, we had vinegar and brown paper; for whooping cough we had camphorated oil rubbed on our chests or goose fat. For mumps we had stockings round our throats and measles we had tea strewed in the teapot by the fire – all different kinds of home cures. They thought they were better then going to the doctor’s. Well they couldn’t afford the doctor”.

However, steady progress did give way to rapid change. The most obvious measure of change is that life expectancy has nearly doubled since 1900.

Medicine in modern Britain, 1900-present

Modern ideas of causes

One idea which has become much more central since 1900 actually goes back a long way – that is the idea that lifestyle affects health. However, in the 20th century considerable research was undertaken to identify exactly how such things as lack of exercise and smoking lead to particular diseases. More dramatic was the discovery of DNA, which may turn out to be an even more important discovery than germ theory. From the initial discovery the Human Genome Project developed. This has identified the exact purpose of each gene in the human body, compiling a complete map of human DNA.

DNA is so important because many illnesses have genetic causes, i.e. they are inherited in the sufferer’s genes. Since DNA was first described, scientists have identified the specific genes which pass on many particular illnesses and illnesses such as Down’s syndrome, cystic fibrosis and some forms of cancer. This work has already led to the development of treatments and to ways of preventing genetic illnesses and more will follow. That is why the discovery of DNA may be an even more important breakthrough than germ theory.

Genetic Causes of Illness: Turning point 1 – Discovery of DNA’s Structure – Turning Point 2 – Mapping the human genome – Why is DNA important? – Since DNA was first described, scientists have identified specific genes which pass on particular conditions and illnesses: Some forms of cancer, Diabetes, Down’s syndrome, Cystic fibrosis, Parkinson’s disease, Alzheimer’s disease.


Today much research done on how specific issues lead to specific problems, funded by government, universities and charities (e.g. smoking, Alcohol, lack of exercise, poor diet, being overweight, poverty and stress).

Causes – improvements in diagnosis: Improvements in technology have led to creation of complex machinery and instruments to diagnose precisely what illness a person has. These developments become widely known very quickly because detailed knowledge of techniques and methods spreads rapidly through journals, internet and conferences (e.g. electron microscopes, endoscopes, nuclear medicine, scans).

Modern treatments

"Vinegar and brown paper’ helped Jack mend his head when he tumbled down in the nursery rhyme, but this wasn’t a ‘pretend cure’. This was still used to treat headaches in the 1930s. This example shows that treatments from earlier periods continued to be used during the 1900s, partly because people had to pay to see a doctor and have that illness diagnosed. However, changes in treatments have in many ways been truly revolutionarily and miraculous from medicines such as aspirin, to ‘magic bullets’ which killed bacteria, to antibiotics such as penicillin. In surgery, improvements came with the identification of blood groups and the development of transfusions, followed by many technical developments, such as plastic, transplant and keyhole surgery. Other high tech method such as radiotherapy and chemotherapy became common treatments. More recently still, genetic medicine has created drugs to tackle illnesses created by particular genes. Changes in treatment have become so rapid that by the time you sit this exam, just a few months after you have started the subject, new treatments will have become available.

1 – Advances in medicine – ‘cure-all’ pills replaced by effective medicines for use in home such as aspirin (although made from willow bark, an ingredient long used in herbal remedies) – ‘Magic Bullets’ (discovered by member of Koch’s research team), sulphonamide drugs which killed bacteria inside body – Sulvanan 606 homed in on and destroyed bacteria causing syphills. Same process used to cure blood poisoning with Prontosl – scientist eventually discovered the importance of sulphonamide which was used and has been used to treat treatment and scarlet fever.

Development of antibiotics – War played crucial part in development of penicillin – After 1945, needed to make available for whole population which took place as scientific techniques and equipment improved to develop these drugs – After 1945, government funded HNS provided antibiotics.

2 – Improved access to care, 1900-48 – by 1900 many working people could not afford doctor or medicine and during Boer War (1899-1902) 1/3 soldiers rejected due to ill health so government started to make changes between 1902-1919.

3 – Impact of NHS from 1948 – development of democracy and increase voting rights meant government needed to reform to get working peoples votes – many problems following WW2 – Beveridge Report – beginning of NHS – everyone got free treatment at point of delivery, 8 million people had never seen a doctor before.


Preventing disease and illness

Pasteur’s germ theory Continued to have an impact on methods of prevention. New vaccines against infectious diseases continue to be discovered and made available. From September 2015 it was announced that a vaccine against meningitis B was to be offered to all babies. Government intervention in prevention has increased through, for example, lifestyle campaigns to encourage people to live healthier lives and to use vaccines. This involvement has developed hugely since the creation of the NHS, which introduced free consultations with doctors and hospital treatment. Developments in science and technology have also allowed that antibiotic and vaccine campaigns have actually led to the development of problems of babies while still in the womb and to correct those problems.

In 1911 infectious disease such as TB and Diphtheria put era and then to devastate epidemics of smallpox and cholera but needed to find vaccines for other disease which killed thousands, but it was a long process. (1896 Typhoid; 1906 TB; 1913 Diphtheria; 1927 Tetanus; 1952 Whooping cough; 1954 Polio; 1964 Measles; 1988 MMR (Measles, Mumps, Rubella); 2008 HPV; 2015 Meningitis B)

Many of these diseases such as measles and influenza, you may not realise can cause death or serious health defects. But that is because vaccines have since been developed added by the availability of free vaccinations in NHS and through advertising campaigns. Governments have invested heavily in flu jabs for certain groups of people such as elderly and key workers in hospitals for this very reason

Preventing illnesses caused by genetic problems – breakthroughs linked to discovery of DNA mean doctors can test/screen for particular genes that cause certain illnesses such as breast cancer and Down’s Syndrome in unborn babies. Lifestyle factors: There has been regular campaigns and initiatives to try to prevent illnesses linked to lifestyle focusing on the effects of things such as smoking and lack of exercise. Everyone over age of 40 are given opportunity for a health check every 5 years, focusing on blood pressure, weight and cholesterol levels alongside lifestyle advice.

Important Case Studies: 1) – The discovery and development of penicillin 2) – The Creation of the NHS 3) – Fighting Lung Cancer in the Twentieth Century

Enquiry: Why has there been such rapid change in medicine since 1900? The Factors: Institution; Government Individual Attitudes seeking improvement War Teamwork Science and Technology Chance